ABSTRACT OF THE

Erasmus Wilson Lectures

ON THE

RELATION OF MORPHOLOGY AND PATHOLOGY.

Delivered at the Royal College of Surgeons,

BY J. BLAND SUTTON, F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE MIDDLESEX HOSPITAL.

LECTURE III.

THE MORPHOLOGY OF CANCER.

MR. PRESIDENT AND GENTLEMEN,—Many surgeons have attempted to elucidate the nature of cancer by studying it in the human species from statistics, from critical and exhaustive surveys of the histological details of various kinds of malignant tumours, in a more thorough and patient manner than I could think of attempting. My plan has been to study it from a morphological standpoint. Until recently the term has been used by a few pathologists in an indefinite sense. Even now in clinical surgery and medicine it is employed often to signify a malignant tumour that, if left to itself, destroys life by involving surrounding structures, and by dissemination through bloodvessels and lymphatics. The adjective "malignant" in its relation to tumours is applied to infective granulomata, sarcomata, and most epithelial tumours, three groups which are structurally quite distinct from each other. It is to the last group that cancers belong. Throughout this lecture the term "cancer" will be used as synonymous with *malignant adenoma*. An adenoma is a neoplasm conforming in histological details to the type of a secreting gland. The less perfectly an adenoma mimics a gland, the more likely is it to exhibit malignant properties, and come under the denomination "cancer."

The intimate relationship between glands and cancer is shown by the fact that adenomata, simple and malignant, arise in situations frequented by glands, and histologists equally competent will often apply the terms "adenoma" and "cancer" to the same tumour when submitted to them separately. Adenomata and cancers have a common feature in the possession of epithelium disposed in a definite manner. This will lead us to study epithelial structures in general.

Epidermic appendages, whether hair or wool, bristles or feathers, glands or teeth, arise from surface epithelium; and though these structures are so unlike when fully formed, they develop from identical germs, and, what is equally remarkable, glands, hair, and teeth may be formed erratically under similar conditions. Gland-germs arise from surface cells, and dip into the underlying connective tissue. The germ, at first solid, gradually acquires a central cavity—the acinus or alveolus. A gland thus formed may extend itself indefinitely by offshoots, and become compound. Although most glands develop from germs during fœtal life, some—e.g., the uterine glands—arise after birth. The close relationship existing between hair, glands, and teeth is worthy of closer study in connexion with cancer than at first sight appears.

In December I described before the Obstetrical Society, London, an ovarian dermoid. The tumour consists of two parts—a small or cystic half the size of an orange, containing a few hairs and much sebaceous matter, and a somewhat larger half nearly solid, presenting an appearance to the naked eye like an ordinary ovarian adenoma. On examining the solid portion microscopically the following structures were found in a piece of tissue one inch square: 1. Teeth in all stages of development, with enamel-organ, gubernaculum, and dentine papilla. 2. Epithelial ingrowths giving rise to hairs and sebaceous glands. 3. Epithelial pearls: these are collections of large epithelial cells perfectly circumscribed and looking not unlike the globular lens of a fish's eye. 4. Groups of sweat glands were present in many parts of the sections. 5. Clusters of epithelial-lined cavities which, so far as their histological characters determined, might be called adenomata, adenoid cancer, or epithelial odontomes. Doubtless it sounds strange to say that teeth and cancer are related; it is nevertheless true. In the last lecture I explained that certain aberrations of the enamel-organ appear as tumours, which in structure have been interpreted as adenoma and as cancer until more exact researches showed their true nature. Some of these are truly malignant. The relation of hair and cancer has long been indicated clinically in the tendency of hairy moles to become cancerous. This relationship has been further illustrated in an interesting observation by M. Panas.[1] He points out that cancer of the conjunctiva almost invariably occurs at the corneo-scleral margin on the outer side, and this is the commonest situation in which to find dermoid patches. M. Panas regards it as probable that this relation is more than incidental, and draws attention to the frequency of pinguecula in the same situation. Pinguecula are composed of epithelial structures and fat.

It is usual to regard sebaceous glands as appendages of hairs; how far this view is correct is well open to question. The fine downy hairs on the skin of the nose have very large glands, and the largest sebaceous glands in the human body are actually found in a situation where hair is normally absent—viz., the nymphæ.

In a general sense we may say that hairless regions are glandular and glandular tracts hairless. For instance, the skin of frogs is hairless, but it is beset with large mucous glands. The correlation of glands and hair is by no means casual; indeed, it is one of intimate character. The more elaborate the dermal covering the fewer and less important the glands. Thus, in birds, epidermic appendages, in the form of feathers, reach a high standard of development; sebaceous gland, in these specialised forms, are almost limited to the cluster at the root of the tail, known as the uropygial gland; even this is wanting in some birds. I was interested to find that the "velvet" covering the growing antlers of deer is beset with very fine downy hair. On microscopical examination I find that the velvet contains sebaceous glands in great number and of large size, reminding us of the relation of the hairs and glands on the tips of human noses. Speaking generally, it may be said that exposure and irritation favour the development of hair, whilst seclusion promotes the formation of glands, and is unfavourable to the development of hair. The nymphæ illustrate this point; these folds in the adult female are overlapped and obscured by the greater labia. They contain sebaceous glands of large size, but no hairs. Not infrequently the smaller labia elongate and emerge from the protected position they usually occupy; the protruded portions become pigmented, the sebaceous glands on the exposed segments are small and inconspicuous, and not infrequently hairs will be found growing from them. Warmth and moisture seem to be favouring conditions for the development of glands. For instance, in the inguinal region of the sheep close beside the dugs a shallow recess exists, usually containing a quantity of unctuous material or smegma; this substance is very abundant in pregnant ewes. The inner wall of this recess is almost devoid of wool, but is beset with a number of sebaceous glands very large in size, thus furnishing another example of glands growing luxuriantly in hairless, but protected spaces—a condition of things further exemplified in the case of the opossum, which contains, in some species, sixteen nipples growing under the protection furnished by the cutaneous abdominal fold known as the marsupium. These facts assist us to comprehend the wealth of glands which characterised the interior of many dermoids, both at the angle of the orbit and in the ovary.

As instances of seclusion favouring the development of glands, reference may be made to the Meibomian glands in the palpebral conjunctiva, to Tyson's glands in the recess between the glans and the reflexion of the prepuce. The glands in the axilla and folds of the nates are large, abundant, conspicuous, and thoroughly active. Mention may also be made of the glands in the external ear passage. These parts, when compared with cutaneous regions in general, may be fairly described as richly glandular. The influence of seclusion on the formation of glands, especially when combined with equable temperature and moisture, is conspicuous with mucous membranes. The mouth has its salivary glands, the alimentary canal from the stomach downwards is rich in glands of various kinds, and the same applies to the Fallopian tube and uterus.

[1] Gaz. Méd. de Paris, June 26th, 1886.

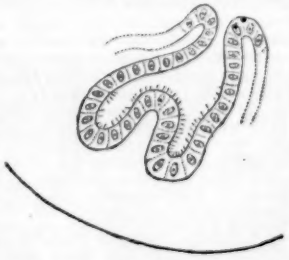
As I propose to show the relationship of glands to cancer, especially in connexion with the uterus, it will be necessary to consider the three sections—Fallopian tube, uterus, and cervix, in detail.

(1) *The Fallopian tubes.*—In text-books of histology, and as a consequence text-books of midwifery, describe these ducts as destitute of glands. In 1888 I attempted to show that the so-called rugæ of the Fallopian tube are simple glands.[2] Since those observations were published I have followed up the inquiry as leisure and opportunity permitted. These recesses, or diverticula, vary greatly in individuals. In the simplest form they strongly resemble the Lieberkühnian follicles of the intestine (Fig. 9); in others they bifurcate at the base, as in Fig. 10, the length of the neck varying greatly. Simple and complex recesses may be seen in the same section of the tube (Fig. 11). The great differences exhibited in the disposition of these so-called rugæ in the tubes depends in a large measure on the proportion of simple to complex rugæ, as well as the region of the tube from which the section is obtained. They are scanty in the isthmus (inner third), but more abundant in the ampulla tubæ (outer two-thirds). It is necessary for my present purpose to establish the glandular nature of these recesses in the tube. Most Metatherian and Eutherian mammals have two Fallopian tubes; these may be defined as the narrow portion of the internal genital passage intervening between the abdominal ostium and the uterus. The uterus is the organ in the cavity of which the ova are normally received and retained after impregnation until the period of birth.

FIG. 9.

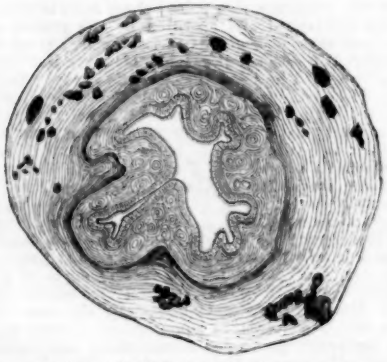
A simple gland from the Fallopian tube (human).

FIG. 10.



A more complex gland from the Fallopian tube (human).

FIG. 11.

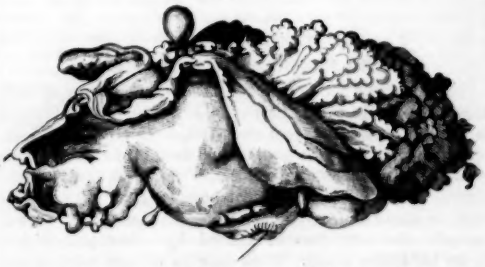


Transverse section of the Fallopian tube, showing glands (human). (After Schenk.)

As leisure permitted I have inquired into the structural peculiarities of the mucous membrane of the Fallopian tube in several mammals. In macaques, especially, the Bonnet monkey, *Macacus sinicus*, the uterus, in shape and the character of its glands, is identical with the human uterus. Its Fallopian tubes possess unmistakable glands occurring in clusters covered with a single layer of regular columnar ciliated epithelium. The cilia can only be made out as a rule in specimens obtained immediately after death and carefully hardened. In monkeys, as in the human female, the disposition of the glands vary in individuals of the same species. In ruminants (sheep, deer, and goats), the Fallopian tubes contain glands of a compound racemose type and in very great number.

I have striven to establish the glandular character of the recesses in the tube in order to demonstrate the nature of an apparently rare form of tumour which arises therein. In 1880 Mr. Doran[3] described under the name of "papilloma of the Fallopian tube" an interesting tumour, which is now preserved in the museum of this College. (Fig. 12.) The histology of the tumour is interesting; it is composed of recesses and cysts lined with columnar epithelium. In the cysts glandular patches occur lined with the same regular epithelium. The microscopical characters are very similar to those seen in the section of the Fallopian tube of the macaque. Indeed, this tumour is not a papilloma, but an adenoma on the type of the glands found normally in this tube. I had suspected the adenomatous character of this specimen for a long time, founding my suspicions on the admirable account furnished by Doran, but my opinion was not verified until, having to report on a similar specimen removed by Dr. Walter of Manchester, I obtained permission to re-examine Mr. Doran's specimen, with the result just described.

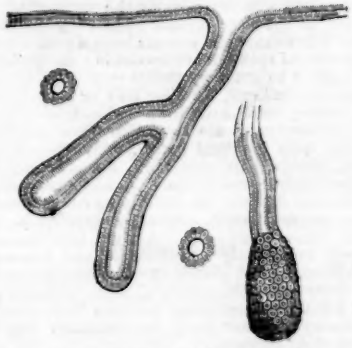
FIG. 12.



Papilloma of the Fallopian tube. (After Doran.) Removed by Sir Spencer Wells.

Of this form of tumour only three specimens are known: two described by Mr. Doran, who first recognised the condition; the third, Dr. Walter's specimen. The subject is of interest, for we know that warts arise in the tube, that they are subject to adenomata, and Mr. Doran has published an example of primary cancer of the tube, the cancerous nature of which rests not only on pathological but also on clinical grounds. These facts are valuable. A tubular organ of the body previously considered devoid of glands is now shown to be richly glandular, to be liable to warts, to adenomata, and even cancer. Hence, it may be regarded as a newly explored region, concerning which few opinions were current as to the nature of its troubles, yet observations show it to be liable to precisely the same aberrations as gland-containing organs in general.

FIG. 13.



A uterine gland (semi-diagrammatic).

(2) *The body of the uterus.*—From the Fallopian tube we may direct our attention to the mucous membrane lining

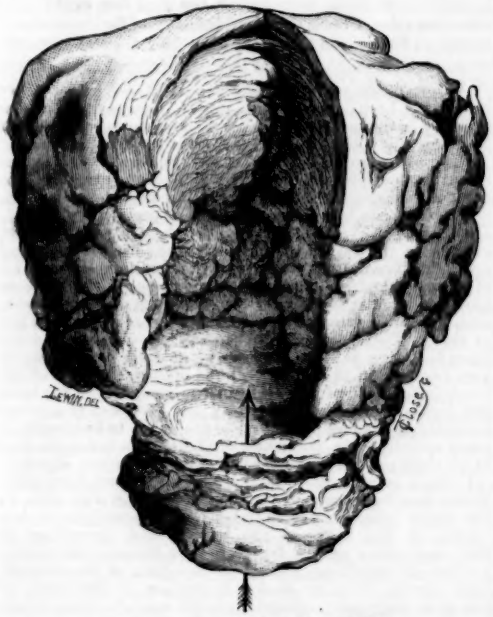
[2] Trans. Obstetrical Society, 1888.

[3] Trans. Path. Soc., vol. xxxi.

the cavity of the uterus. This is furnished with a large number of glands, which at first sight appear to be peculiar in shape, but it is easy to show that they are merely an exaggeration of the simple glands of the tubes. For instance, in order to produce a uterine gland from those found in the Fallopian tube, we need only lengthen the neck of the gland and elongate its recesses, and the result is that shown in Fig. 13.

Two forms of tumour arise in connexion with the uterine glands, one very rare, described as adenoma of the uterus, and the other cancer. Of primary cancer of the body of the uterus we know very little; few cases have been reported with that conciseness and completeness which modern pathology requires. By far the most thorough and useful description of this disease is given by Dr. John Williams in his able work on Cancer of the Uterus. It is far from my intention to discuss in all its bearings this disease of the uterine mucous membrane; my only object is to attempt to add further facts and reasons to those adduced by Dr. Williams in support of the opinion that cancer originates in the glands. Whilst fresh from a perusal of this book, I received from Dr. Bantock some

FIG. 14.



Primary cancer of the body of the uterus.

nodules of new growth removed from the interior of the uterus. On examining these, I reported that the microscopical characters were like those of an adenoma on the type of uterine glands, but the ducts and acini, instead of possessing a single layer of columnar epithelium, were lined with cells three rows deep in many of the sections, and that the condition was in the highest degree suspicious. This coincided with the clinical aspect of the case, and the uterus was extirpated. A more complete examination of the specimen justifies the view I took of it, and it is an example of malignant adenoma (cancer) of the uterus, and corresponds in every way with the specimens described by Dr. John Williams. The point I wish to emphasise is this, that the histology of cancer affecting the body of the uterus primarily is a mimicry more or less complete of the uterine glands, and, as far as I can at present see, the closer the mimicry the less malignant the new growth. At the present time no one has yet placed on record a description of an innocent adenoma. Dr. Matthews Duncan[4] described one case of adenoma of the uterus, but it was malignant in its clinical behaviour.

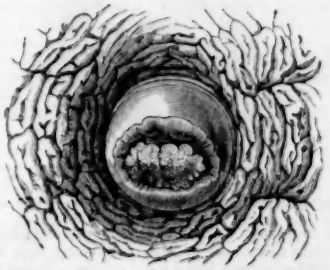
[4] Edin. Med. Journal, vol. xix., p. 97.

(3) *The cervix uteri.*—The parts usually described as cervix uteri consist of two portions, the cervical canal and the portio vaginalis. The latter is that part of the uterus which presents in the vagina, and extends from the external orifice of the os uteri to a line drawn through the point where the cervix is inserted into the vagina. The limit between the os uteri and the portio vaginalis is indicated in a healthy cervix by the change from squamous to columnar epithelioma. The portio vaginalis has very few glands, but the number varies in different cases; they are simple mucous crypts. "The portio vaginalis is really a cup of stratified epithelium, resembling a tailor's thimble, which fits on the lower end of the uterus proper." The cervix is limited above by a plane drawn through its inner orifice. (Dr. John Williams.)

The glands of the cervix are more complex than those of the uterus; they are, in fact, racemose glands. The cervix, too, is often the seat of adenomata, which appear either as soft velvety pink elevations around the margins of the external or within the canal; such conditions were until the researches of Ruge and Veit regarded as, and described under the name of, ulceration or erosion. Adenomata also appear as polypoid projections within, or hang from the cervical canal. Lastly, the terrible condition known as cancer of the cervix is the commonest of all varieties of this disease, and takes origin in the glandular structures lining the cervical canal.

It will be interesting to inquire briefly into these conditions separately, and we may deal first with the affectiion known clinically as "erosion of the os uteri." This is better termed "adenoma." The cervix uteri is very liable to become adenomatous, not only in the human female, but also in female macaque monkeys. Recently Mr. C. Gordon

FIG. 15.



Sessile adenoma of the os uteri in a macaque monkey.

Brodie and myself investigated this subject, and we find that the histology of the condition as well as the leading clinical symptoms are identical in monkeys and women. As macaque monkeys are easily obtainable, we were able to get the tissues carefully preserved and study the histology, and we found that the glands in an erosion represent in an exaggerated degree the glands of the cervix; but in the acini the columnar epithelium is of such large size and arranged in rosettes that at first we felt it could not be epithelium. This glandular overgrowth is not confined to the neighbourhood of the os, but often extends the whole length of the canal—a fact worth remembering in treating such cases surgically. In the monkeys the adenoma may form a sessile mass, as in Fig. 15; sometimes a pedunculated or polypoid piece may hang in the canal, as is occasionally found in women. These pedunculated adenomata are of some interest. The specimen represented in Fig. 16 has two such tumours projecting beyond the os; they arise from the cervical wall about half an inch from the external opening. Those portions lying under cover of the canal are beset with glands, but the portion projecting into the vagina is covered with layers of squamous epithelium, and no trace of glands could be detected in sections made from this part. It is important to bear in mind this disposition of epithelium on tumours related to or projecting from the cervix uteri, as the presence of squamous epithelium might be taken as an indication of malignancy.

Before leaving adenomata of the cervix mention should be made of the fact that the aberrant glands which constitute an erosion arise in the same way as glands in general—that is, club or flask-shaped processes of the

epithelium dip into the underlying tissues, and subsequently acquire a lumen. In one of our specimens we were able to satisfy ourselves that before the ingrowths could acquire a lumen many of them were shed, leaving sockets in the tissue which they had invaded. In the next stage we are confronted with malignant adenomata, and it is a remarkable fact that to the naked eye typical cases of adenoma and cancer are very unlike, yet microscopically the condition is often so very similar that it would be hazardous for a pathologist to pronounce a positive opinion one way or another. As far as I have examined the adenomatous and cancerous growths of the cervix uteri, I can only say that in the clinically malignant cases the microscope showed that the glands were less perfectly formed—that is to say, the acini, instead of being lined with a regular peripheral layer of cells, were filled with ill-formed cells, and in many instances the gland-germs had not become hollow before their constituent cells underwent degenerate change. To put the matter briefly, cancer of the uterine cervix (excluding the portio vaginalis) is, in histological details, best described as consisting of imperfectly developed glands on the type of those normally found in the lining membrane of the canal.

To my mind, it is very suggestive that in the three parts of the uterus—Fallopian tube, uterus proper, and cervical canal—adenoma and cancer occur, and in each instance the histological type mimicked is that of the glands peculiar to each section. Careful inquiries conducted in other

FIG. 16.

Pedunculated adenomata of the cervix uteri (Homo).

regions of the body return the same answer; such facts as these indicate more clearly than anything else that cancer or malignant adenoma has a local origin. These facts make us ask ourselves, If cancer is of local origin and its point of departure is in glands, what is the irritant that initiates such disastrous changes? This part of the question I am not prepared to consider, not even to suggest a theory; my aim has been simply to show that cancer belongs to a group of structures comprising hair and its modifications, teeth, and glands. We pass by insensible gradations from glands to innocent adenomata, and from these to malignant adenomata or cancers. Speaking generally, the environment which promotes gland development is favourable to the development of cancer—viz., seclusion, an equable temperature, and moisture.

It is also important to bear well in mind that the term "cancer" must be used in a definite sense, if we are expected to find a *cause*, much less a *cure*, for this disease. Should a parasite be demonstrated as the cause of cancer, and this is extremely probable, it will in no sense invalidate its right to rank with adenomata, for its structural characters are so entirely different from other forms of tumours attributable to micro-organisms that they ought never to be confounded. Lastly, I feel sure if the word "cancer" were banished from our terminology, pathology would be the gainer, and mankind at large far happier for the expurgation.

SOUTH DEVON AND EAST CORNWALL HOSPITAL.—During the year 1889 1267 patients had been treated. In the out-patients' department 1866 cases of minor accidents or ailments received surgical treatment, and 653 operations were performed. The nurses' earnings during the year amounted to £897 8s., and, after payment of disbursements incidental to the staff, a credit balance remained in hand of £318 16s.

Clinical Lecture

ON

SOME OF THE MORE PROMINENT SYMPTOMS IN THE PRESENT EPIDEMIC OF INFLUENZA.

Delivered at St. George's Hospital,

BY THOMAS WHIPHAM, M.D., F.R.C.P.,
PHYSICIAN TO THE HOSPITAL.

GENTLEMEN,—In the following remarks I shall limit myself to the clinical aspects of the prevailing disease known as influenza. Even if time allowed me to enter into the history of previous epidemics which have occurred since the days of Hippocrates, I should merely recapitulate what is already contained in the text-books on medicine. I propose therefore to call your attention to-day to some of the more prominent characteristics of the complaint as we have observed them here during the past few weeks. At the same time, I must ask your indulgence for many shortcomings; for, as you know, we have had a great outbreak among our nursing staff, and this has rendered observations of details more or less imperfect. Our chief experience here has been among the nurses, comparatively few ordinary patients having been admitted in consequence of the compulsory closure of three wards for the reason that we had not a sufficient number of nurses unaffected by the influenza to carry on the ordinary work of the hospital. The onset of the disease in the majority of the cases was, as has been described in the few accurate records of previous epidemics, almost sudden. A person in his ordinary health, with but short or perhaps no warning, may be attacked with a feeling of great chilliness, rigors, vertigo, of extreme depression, or all of them—a depression so great that some of the patients have described it as closely resembling that of sea sickness, even to the carelessness as to whether the end should be life or death. Coincidently with the rigor, or perhaps in some cases following it, in the course of an hour or so occurred very severe pain in the frontal and occipital regions of the head, in the back of the neck, in the eyes, and in the back and legs. The pain in the head and back was of unusual intensity, and some patients who are liable to headaches of great severity have remarked of the pain in influenza that in all their past experience they never felt any to equal it. "I think it will drive me mad," one or two have said. There has been something peculiar also in the pain in the eyes; the greater number have described it has "pain at the back of the eyes," and, according as they were more or less fanciful, have likened the feeling to that of something pulling at the back of the eyeball. One woman told us that "it felt as if the back of her eyes were being rubbed with hot sand." Others have described intense pain in the chest, the patients' descriptions of which much resembled those of angina pectoris. In one or two of the patients who have come under observation there has been, before the more acute symptoms set in, a most uncontrollable drowsiness—accompanied, perhaps, with some frontal headache. This drowsiness was so great in one case that the lady was, as a matter of fact, only awake—during the first twenty-four hours—when she was aroused to take nourishment; in another case, the patient, on the afternoon of Jan. 3rd, had slight frontal headache, and was unable to keep awake. She went to bed at 11 o'clock and slept well till 3 A.M., when she awoke with intense pain all over, especially in the head and back. With the onset of severe pain the drowsiness ceased, and the patients had no sleep for about thirty-six hours. This sleeplessness occurred in some instances in the absence of any very great pain. By the time that the pain and depression had become fairly established the face had assumed a characteristic appearance—i.e., it had become pale, or perhaps somewhat dusky, and the eyes were dull, heavy, and half closed, as at the commencement of small-pox or typhus fever; but, in addition to this, the conjunctivæ, in these cases of influenza, were red and turgid, and with a slight tendency to lacrymation. The aspect was somewhat that of measles, but without the coryza.

The eyes, besides being painful, were, as a rule, very tender. In this stage of the disease, or earlier, the patient is overcome by a feeling of most extreme weakness—so great is it that no one who has had the influenza, under our observation, even in those mild attacks in which there was no pyrexia, has omitted to complain of it. The rapidity with which this weakness of the whole body comes on and its intensity are certainly the most remarkable features of the disease. In one case, a patient who was in his usual good health on Saturday morning manifested all the symptoms of influenza in the afternoon, and on the Monday afternoon, when it became necessary for him to go downstairs, he found it a matter of difficulty owing to the great weakness of his legs. In previous epidemics, catarrh of the nose, throat, and bronchi has been described as the usual concomitant of the disease; in the present visitation, as we have seen it in this part of London, catarrh has rather been remarkable for its absence. In my own experience only two cases have been preceded by a "bad cold."

It is worthy of note that the tongue, even in this stage of the disease, with its rapid pulse and high temperature, has, in a very large proportion of cases been, at the worst, only coated with a thin white fur, and in some cases the tongue has not been coated at all; in a few there has been a pretty thick fur, and rarely has the coat been other than white and "creamy." The rise of temperature in the very few cases in which a complete record was obtained—viz., in patients recovering from another malady—was very rapid, the maximum having been attained in from twelve to sixteen hours from the first rise; only in a few cases did it exceed 103° F. Gastro-intestinal disturbance has here been uncommon; but the great want of appetite, or, as it might better be expressed, the abhorrence of all food, has been an almost universal rule, certainly at the onset of the attack, in the cases I have seen both in and out of the hospital. Anorexia such as has occurred in these cases of influenza is, I should say, but rarely met with save in the later stages of typhus or other fevers. Vomiting has been of rare occurrence, and has yielded to treatment (hydrocyanic acid and soda). In the few annotations published on the present epidemic constipation has been mentioned. In our experience at St. George's Hospital, however, although in the greater number of the cases there has been the inaction of the bowels usual in persons confined to bed, nothing like constipation has been seen, and an ordinary aperient pill or draught has been all that was necessary to produce a free evacuation. On the pulse our observations give no definite results. It is true that in the majority of the cases the pulse of the radial artery was very weak; still in no inconsiderable proportion was it full and strong during the whole course of the fever. It was thought that possibly exhaustion previous to the onset of the influenza might account for a weak pulse, while the absence of any such debilitating causes might explain the fulness and strength of the arterial beat. The nurses of the hospital are persons whose work is as far as possible equalised in their different classes, and all live under strict regulations as to diet, exercise, &c., and yet some of those who looked, and probably are, most robust, had a very weak pulse from the beginning; while the pulse in more than one instance of a delicate-looking nurse was strong enough to excite a feeling of surprise. In the case of a friend of my own, with an extensive and laborious practice involving much night work, I certainly expected to find a weak pulse, whereas I was astonished by its strength and volume. In this instance the attack was preceded by a very bad cold, attended by profuse lacrymation and flow of mucus from the nose, which lasted a week before the disease declared itself, and which ceased, with the exception of a nasal tone of voice, immediately the feverish symptoms supervened. The patient was at the time of the attack in less than his usual health, yet his pulse remained strong throughout the course of the disease.

The complications of the influenza under observation here have been of the skin and throat. In two instances a brilliant erythema appeared on the second day on the trunk and arms chiefly, the face being free and the legs nearly so. In itself this eruption was indistinguishable from that of scarlet fever; in one case it had nearly disappeared by the end of the third day, and in the other by the end of the fourth. In neither of these patients was there concomitant sore-throat or subsequent desquamation, nor did anyone in the same ward manifest symptoms of scarlet fever. In a third case a painful eruption of herpes appeared on the nose and lips on the second day, and did not subside until the third day. One patient had a very severe form of follicular tonsillitis; in fact, the question as to its being really a case of diphtheria was carefully considered. This condition of throat appeared on the second day of the influenza; both tonsils were affected, and the right covered with thick, white, membrane-like secretion. On the third day of the influenza much of this secretion had disappeared from the right tonsil, exposing to view the blocked follicles, while on the left side scarcely any remained; and on the following day, beyond some excessive redness, there was nothing amiss with the fauces. This nurse was in the ward with the others, but no one else was similarly affected. The question of diphtheria, therefore, may be in all probability dismissed.

In one and all the cases which have come under observation diaphoresis has marked the time of defervescence in some instances so profuse as to thoroughly soak the night attire and the sheets—as profuse, in fact, as the night sweat of phthisis, in others merely a comfortable moisture of the skin. Coincidently with this sweating, or soon after it, there was a very rapid fall of the temperature; in one case it fell from 103° to 98° in eight hours, a crisis comparable with that of pneumonia or typhus fever. With the fall in the temperature there has occurred, as a rule, a diminution of the pulse-rate; but in one or two instances the latter has rather preceded the former, and a pulse which had been 120, with a temperature of 101·2°, has been counted at 84 in the commencement of defervescence with a temperature of 100·8°.

With the crisis came a great relief to the patient, but even so a feeling of extreme weakness was left, and although the cessation of pain removed the feeling of extreme depression, the patient has usually expressed a desire to get up, but an utter inability to attempt it on account of the weakness. In the course of a day or two strength returns, and the patient is convalescent. Great caution against exposure of the skin to cold or draught must be exercised during the convalescence. I have seen one case where convalescence was, as it appeared, thoroughly established; the patient had been up for a day or two, and, the weather being mild, was allowed to go out. On the same evening she was again feverish, had a return of her pains, and in fact had what seemed to be a relapse. The same thing happened in the case of a gentleman who was allowed to get up on the fifth day of a somewhat severe attack. Next day he went down stairs, and on that evening was attacked with very acute pain in the left side of his chest, aggravated greatly by respiration; great pain also across his loins and along both sciatic nerves. Auscultation failed to give evidence of pleurisy. He returned to bed and passed a sleepless night in consequence of the pain; next day he was better. With this recurrence of the pain the temperature was but little raised or the pulse-rate much increased.

It has been stated that in addition to pain there was great tenderness, in many of these cases, of the eyeballs. In some instances this tenderness was a prominent symptom even when the pain was comparatively speaking slight, and the tenderness persisted when convalescence had been otherwise quite established for two or three days, or even more.

An interesting fact in connexion with this epidemic, as we have seen it at St. George's Hospital, is that the victims have been selected chiefly from the resident staff and the nurses; some of the students have suffered. At present but two of the staff of the hospital have been attacked, and very few of the patients in the wards have contracted the disease. Of those few two were nurses under my own care, one engaged in private nursing, and who was convalescent from a prolonged attack of enteric fever; the other, one of the hospital nurses recovering from enteritis. It seems strange that a class of persons, who must, from the trying nature of their duties, be in good health, should have succumbed in such numbers; while the patients, who were, as a matter of course, most of them debilitated by sickness or privation, should have enjoyed a comparative immunity. On some rare occasions during the prevalence of an epidemic of small-pox or scarlet fever the governors, at the suggestion of the medical staff, have temporarily suspended the regulation by which patients are allowed to receive visits from their friends, with the object of preventing the importation of the prevailing disease into the hospital. In the present instance no such action was taken, and yet the patients escaped and the nurses contracted the disease. It may be suggested that nurses, by reason of the arduous

nature of their duties, should not be regarded as persons of very robust health. Even so, I would reply that they perform an amount of work in a more or less vitiated atmosphere under which the strongest might break down, and that to do this they can neither be persons of feeble physique nor in indifferent health. Supposing for the moment that they were, they are, at all events, in better health than the patients. I confess that I am puzzled, and have no explanation of the fact to offer you.

It is impossible to overlook another, coincidence it may be—i.e., that as soon as those of the nurses who were attacked were isolated and placed together in one of the wards which had been closed, the spread of influenza among them ceased. Personally, I am inclined to think that it was a coincidence, because at the same time the virulence of the epidemic abated, as was shown by the marked diminution of the applications of out-patients affected with the disease. The fact that the spread did cease when the arrangement was adopted must be borne in mind as a possible evidence of the infectious nature of influenza.

These remarks would probably be considered incomplete were no mention made of treatment and its effects. The foregoing remarks are a digest of our recent experience of the clinical aspects of the disease, and the question of treatment must in a clinical lecture be dealt with in like manner. The time would be insufficient to enable one to enter into details, and details in a lecture of this kind would be wearisome. The first cases which came under notice were treated with quinine in five- or six-grain doses, and it was generally given in an effervescing solution of ammonium citrate every four hours. Its effect on the disease was, so far as we could judge, in one word *nil*. It appeared to have no influence either in reducing the temperature, alleviating the pains, or modifying the course of the disease. It was selected for administration to patients who were suffering from the characteristic depression in preference to antipyrin and various other drugs which have a depressing action on the heart. In consequence of its failure to alleviate the symptoms, it was decided to try ammonium bromide in half-drachm doses, combined with half a drachm of tincture of henbane, administered every four hours, and in a few instances the result seemed satisfactory. One of the head nurses volunteered the statement that the pain in her head and legs, which was so intense that she felt as if she "should go mad," was greatly relieved, almost at once, by the first dose of the medicine. Another patient whom I saw outside the hospital was for the first sixteen hours of the attack treated every four hours with salicine (twelve grains) in an effevescing mixture of ammonium citrate, without any remission of her intense pain. At 6 P.M. on Jan. 22nd, she took her first dose of ammonium bromide and henbane, and after the second dose at 11 P.M. she fell asleep for the first time since the commencement of the attack, and slept till nearly 3 A.M., when she had the third dose; between that time and 7 A.M. she again slept quietly. A fourth dose was then administered, and when she was seen at 9 A.M. she was entirely free from pain, and has remained so since. So far, so good; and that is really all that can be said, for in some other cases in which these drugs were used, and in the same doses, no alleviation of the pain resulted. In two of the nurses, who were robust women, in whom the pulse was full and strong, and whose pain was very severe, in one of whom the pain in the head was limited to the parts around the left eye, the bromide and henbane failed signally in giving relief, but the pain yielded at once to antipyrin in half-scruple doses every four hours.

The opportunities for making the observations upon which these remarks are based were in the main afforded me by Mr. F. J. Marshall, by whose kindness I accompanied him in his daily visit to the ward set apart for the treatment of those nurses who were laid up with influenza. I am much indebted to him for his assistance in keeping the record of the cases, and for allowing me to avail myself of his practical experience in the management of the patients.

THE SANITARY INSTITUTE. — The Duchess of Albany, patroness of the Sanitary Institute, has expressed her intention of being present at the course of lectures on Domestic Hygiene for Ladies, commencing Feb. 24th, at the Museum, 74A, Margaret-street, W.

ABSTRACT
(from a Shorthand Report)
OF A

Post-graduate Lecture

ON THE

BEGINNINGS OF JOINT DISEASE IN CHILDREN.

Delivered at the Hospital for Sick Children, Great Ormond-street,

BY J. HAMMOND MORGAN, F.R.C.S.

IN this lecture attention was called to the anatomical analogies of the knee and the elbow as being borne out by their pathological characteristics as well, disease of the synovial membrane going through much the same process in the one as in the other, and in both cases manifesting itself beside the bony prominences—in the case of the elbow on either side of the olecranon, and in the case of the knee at points above and below and upon either side of the patella.

Acute spontaneous diseases of the synovial membrane in either of those joints were very unusual, and occurred either as the result of pyæmia or of some form of blood poisoning akin to it, or it might follow upon exanthematous fevers or typhoid, where the poison might have been conveyed from the intestinal ulcers to the surface of the synovial membrane. Chronic affections were not rare, occasionally happening as the sequel of some acute affection or the result of rheumatism—neither, however, being very common in children. Tuberculosis was by far the most frequent cause of chronic affection of the synovial membrane, and often the strumous degeneration of Brodie ensued upon an acute or subacute inflammation, in which all the characteristics of synovitis were present; then a denser condition followed, in which the lining surface of the membrane changed from its ordinary character to that in which a granulation tissue was developed until the cavity of the joint was filled up. It was difficult to say with any authority that this pulpy degeneration was always of tubercular origin, as few opportunities arose for investigating this subject, and it was not absolutely certain that the bacillus was to be found—a fact, however, which did not prove that the origin was not of that character. The question was not definitely settled, and one could only state one's impression from the surroundings—namely, that the majority of cases of swelling of the synovial membrane, in which a large amount of granulation tissue was deposited in the interior of the joint, was due to the presence of bacilli in almost all cases. Against that statement it might be objected that many such cases subsided under proper treatment, because the average of such affections brought under observation showed a large proportion of them getting completely well under conditions of rest, secured by properly applied splints and generous attention to the state of the system. The light leather splint, by confining the movement, but permitting the air to circulate around the joint, by which the skin was not affected, seemed to be the best application. Under such treatment the swelling subsided, the wasted muscles again developed, and a perfectly useful and movable joint was left. Should the malady not go on happily, the granulation tissue broke down in small abscesses, and these, by coalescing, formed large collections of pus which would ultimately make its way to the surface. In these cases the antiseptic treatment of Lister—exposing and cleaning out the cavity and clearing away the new material before the cartilages were affected—could be most usefully applied, the great point in the treatment being to perceive when the case was progressing to abscess, and to treat it before more important structures than the synovial membrane had become affected. The subject of tuberculosis was far from being settled, and the discussion of mere pathological points would be left to another occasion. In joints like the knee and elbow, the epiphyses brought into contact with the articular ends of the bone were exactly in the same position as the cancellous bones of the ankle and wrist, with even

greater tendency to disease. A very slight injury, direct or indirect, sometimes set up inflammation in the epiphyses or in the epiphysial cartilage between the end of the bone and the articulation. In either case the inflammation was of a very serious kind, because if it went on to suppuration the pus had to make its way to the surface of the bone or to the under surface of the cartilage, in which case the joint could not escape being affected. The inflammatory process consisted of a hyperplasia of the medulla, as in cancellous tissue of flat bones, and the direction in which the matter progressed depended on the part in which the disease originated. In acute cases the pus made its way to the surface and got underneath the skin without going forward into the joint; but in more chronic cases it formed a larger cavity, exposed the under surface of the cartilage near the joint, and, having done so, deprived that part of the cartilage of all nourishment. Destruction then became rapid, and a way was found for the pus to enter the cavity of the joint. The majority of these cases were also due to tuberculosis, although this was very difficult of proof, partly because the tissues had undergone a considerable amount of destruction before any possibility of investigating their nature could be obtained, and partly on account of the difficulty of demonstrating the bacillus.

In mentioning other causes of joint disease in children, the lecturer thought syphilis was spoken of oftener than was warranted by actual experience, though it was not denied for a moment that many cases of joint disease in the infant were due to the syphilitic taint. When due to that cause it was exceedingly easy to recognise, and it yielded in a marvellous way to treatment. The syphilitic child presented a yellowish waxy appearance, having ulcers on the mouth, nose, or anus, and the condition of the joint affected could hardly be mistaken. The child lay with the limb in a position in which the affected joint was perfectly passive; so much so that the name of "pseudo-paralysis" had been given to this disease before it was known to be due to syphilis. Crepitus could sometimes be elicited in the swelling, either owing to the loss of the cartilages from the two surfaces of the interior of the joint, or, what was more probable, to the separation of the epiphysis from the shaft of the bone, but it was impossible on account of the swelling to say which. At all events, under treatment the joint became freely movable, and all the signs of crepitus disappeared. A good many people were apt to put down to syphilis many affections of the joints really explainable by other means, although the very definite characteristics of such a diseased condition, particularly where the elbow, the shoulder, or the knee was affected, were quite unmistakable.

The following table gives the results of an analysis made by the lecturer at the Ormond-street Hospital of 158 cases of joint disease during the years 1879–1880:—

	Upper extremity.			Lower extremity.		
	Shoulder.	Elbow.	Wrist.	Hip.	Knee.	Ankle.
1879	1	5	1	47	23	3
1880	4	4	2	43	17	8
Total	5	9	3	90	40	11

From these figures it would appear that while disease of the joints formed 5·5 per cent. of all the cases which came to the out-patient room of the hospital, cases of disease of the hip were 56·9 per cent. of the total, and the frequency of joint disease of the lower extremity over joint disease of the upper is very forcibly illustrated. From the extent of the synovial membrane of the knee it forms more frequently than any other joint the site of tubercular disease. One of the earliest symptoms of knee-joint disease was to be discovered by gently pressing round the bony surfaces, when it would be found that pain, due to an inflammatory state of the cancellous tissue of the epiphysis, whereby the periosteum became implicated, could generally first be elicited at the most prominent portion of the inner condyle, and might occasionally be detected over the outer condyle. Sometimes a certain amount of necrosis took place. With proper care this might be arrested, and entirely subside, or might leave some chronic thickening and enlargement of the part, which might not interfere with the full use of the articulation, and, if recognised before the cartilage was involved, a timely incision and removal of the sequestrum would frequently save the joint. With regard to the tibia, similar results might occur, although certain anatomical peculiarities—the firm fibrous structures intervening between the upper part of the head of the tibia and its articulation with the fibula—prevented detection from the outer side, and therefore the pain, in the majority of tibial cases, presented on the inner aspect. It would hardly be thought that the patella, covered with fibrous tissue, and so well supplied with nourishment, could give rise to this form of disease. Two cases were observed last year, in one of which arthrectomy was performed. The cartilages of the femur and tibia were unaffected, but a groove on the outer surface of the cartilage of the patella led to a carious cavity within the bone, which communicated with an abscess on its outer aspect by a similar sinus.

The pathological analogies between the knee and elbow were nearly as closely related as the anatomical ones. From the fact that the earliest symptom of implication of the elbow-joint was found on either side of the olecranon process, where the synovial membrane is nearest to the surface, and also since so many cases occur which recover by means of complete rest brought about by the application of suitable leather splints, we are forced to believe that the mischief begins in that structure. But if the cases which did not progress favourably were examined, it would be found that those requiring excision of the joint commenced by an epiphysitis leading to necrosis either of the lower end of the humerus or of the ulna. He had no recollection of having seen any case in which disease commenced primarily in the head of the radius or in the olecranon, for the simple reason that until the tenth year these parts were cartilaginous. Notwithstanding the fact that in the last cases in which he had performed excision of this joint the disease had manifestly originated in the ulna and implicated it to a considerable extent, and secondarily involved the synovial membrane, he did not relinquish his impression that in the elbow the disease most frequently originated at the lower end of the humerus. An accurate analysis might show that disease of the knee in early life was more often situated in the synovial membrane, but after the fifth and up to the tenth year, when bony growth was active in the epiphysis, disease would more frequently originate in that situation.

ON THE

ACTIONS—ANTIDOTAL AND SUMMATIVE—THAT THE PRODUCTS OF BACTERIA EXERT ON THE COURSE OF INFECTIVE DISEASE.

BY G. SIMS WOODHEAD, M.D., F.R.S.E.,

SUPERINTENDENT OF THE RESEARCH LABORATORY, ROYAL COLLEGE OF PHYSICIANS, EDINBURGH; SANITARY RESEARCH SCHOLAR, THE HON. THE GROCERS' COMPANY, LONDON;

AND

G. E. CARTWRIGHT WOOD, M.D., B.Sc.[1]

IN 1880 Pasteur[2] showed that the chief symptoms of fowl cholera could be induced by the inoculation of the sterilised products of the fowl cholera germ. Since that observation the work of experimenters has gone more and more to prove that the action of a disease germ is dependent on the production of a specific poison. At the present time the toxines which give rise to the chief symptoms in a number of diseases have been separated, in some cases from the animals affected, in others from cultivations of the specific microbe, carried on outside the body—i.e., cholera,[3] typhoid fever,[4] anthrax,[5] and diphtheria,[6] and we have in some instances already acquired—thanks chiefly to the beautiful researches of Brieger—more accurate information regarding their chemical constitution and nature than even in the case of the vegetable alkaloids. About the same time that Pasteur's observations were made, Chauveau[7] suggested that the acquired immu-

[1] The experiments on which some of these remarks are founded have been already published in a note communicated by Prof. Chauveau to the French Academy of Sciences Comptes Rendus, Dec. 23rd, 1889.

[2] Comptes Rendus, tom. xc., p. 1030.

[3] Nicati et Rietsch, Comptes Rendus, tom. xcix., p. 123; Brieger, Berliner Klin. Woch., 1886; Hueppe, Deutsch. Med. Woch., 1889.

[4] Brieger, Untersuchungen ueber Ptomaine, dritter Theil, S. 85, 1886.

[5] Hoffa, Die Natur des Milzbrand-Giftes, 1886; Hankin, Brit. Med. Journ., p. 810, 1889.

[6] Roux et Yersin, Annales de l'Institut Pasteur, No. 12, 1888.

[7] Comptes Rendus, tom. xci., July 19th.

nity was brought about by the action of the soluble products of the microbe. He stated that in pregnant sheep anthrax bacilli, after inoculation, were unable to pass the walls of the placental villi, and he concluded that the immunity, which was usually exhibited by the lambs of those animals that had suffered an attack of the disease, must have been conferred by the action of the soluble products which alone had been able to pass through the walls of the villi of the placenta. It has since been established for a series of diseases, hog cholera,[8] anthrax,[9] fowl cholera,[10] and certain septicæmias,[11] that the introduction of the sterilised products of the specific organism can protect a subject against the subsequent action of the virulent organism.

From a consideration of the facts at present at our disposal we are led to regard such *immunity* as an acquired *tolerance* of the specific poison, and the process of recovery from an attack of anthrax, for example, as a condition of incipient immunity, gradually passing into a more perfect form. This tolerance, which, varying in degree, can produce an immunity more or less perfect in character, has been taken advantage of by Hueppe and one of the present writers[12] as a means of proving that a *putrefactive* organism produces minimal quantities of the same specific poison as the *parasitic* form. The pathogenic microbe probably produces only relatively larger quantities of the toxine, but inasmuch as the saprophyte does not induce disease, and as we have not yet been able to cultivate it into the parasite, even although the organisms agreed perfectly as regards their morphology and appearances under cultivation, the chain of evidence would still be incomplete. By using, however, the saprophytes as *vaccines*, and observing that the animals that had undergone this process were, afterwards, either immune or much less susceptible to the pathogenic microbe, phylogenetic relations were established between a common putrefactive organism and a most infective disease germ, that of anthrax. This view of immunity as a tolerance of the specific poison, so simple and natural, would no doubt have received more general acceptance were it not that a series of facts of an entirely different order, which we are now led to regard as pointing in the direction of an "anti-dotal" action, appeared to be inconsistent with it. It had been found that if, along with anthrax bacilli, certain other indifferent organisms, which have no relation to anthrax, were simultaneously introduced into an animal, the disease did not run its normally rapid course, many of the animals, indeed, completely withstanding the disease.

Emmerich[13] was the first to break ground in this direction in his experiments on the influence exerted by the introduction of the Streptococcus erysipelas into the veins of an animal either before or during the course of an attack of anthrax. Pawlowsky,[14] in a series of experiments conducted at the suggestion of and under the superintendence of Virchow, found that a considerable number of organisms, such as Micrococcus prodigiosus, Friedländer's pneumonococcus, &c., exerted the same influence in a greater or lesser degree. Bouchard[15] has since then communicated the fact that Bacillus pyocyaneus acts in a similar way, but in perhaps an even more marked manner. As we had already come to regard the specific symptoms of a disease as dependent on the production of a specific toxine, and the immunity which holds only for one disease as a tolerance of this special poison, it seemed to us most probable that the action of these other organisms on the course of the disease must also be due to the products which they form. Prompted by these considerations, we proceeded to investigate, along these lines, the mode of action of one of these indifferent organisms, a preliminary note on the result of which we now present.[16]

On Nov. 5th, 1889, a ten days' old cultivation of Bacillus pyocyaneus was carefully sterilised (the absence of the living organisms being proved by control inoculations on bouillon). This material was then kept in an ice safe, and a small quantity was drawn off and warmed to the temperature of the body as required for injection. Our anthrax virus, which had been grown in broth, when inoculated into the ear of a (control) rabbit, proved fatal early on the fourth day. Three other rabbits inoculated with the same anthrax received sterilised pyocyanin culture in quantities varying from 2 to 4 cc. into the subcutaneous tissue of the abdomen, twice daily, for five days. During this period the animals showed no marked symptoms of disease; one remained alive for seven days, a second for nine days, and a third is still alive. On Nov. 15th two rabbits were similarly inoculated with an agar-agar cultivation of anthrax bacillus, which killed a control rabbit on the third day. At the same time 3 cc. of the sterilised pyocyanin solution were injected as above, and this was repeated daily for seven days, but in this case once a day only. These two rabbits were alive and well at the end of three weeks.

We cannot now enter into an explanation of the differences observed in the individual experiments, nor can we go into the question of the *attenuation* which the virus had undergone in those cases in which the protection was not complete. These are at present being more fully worked out, and will be published later. It suffices here to have shown that just as the *soluble products* of the pathogeni organisms confer immunity, so the products of those organisms which protect against anthrax exert their action apart from the presence of the living organism.

We have now to consider the mode of action which these saprophytic organisms exert in modifying the course of the disease. Pawlowsky[17] and Bouchard[18] both note that animals which have passed through an attack of anthrax, with the help of the saprophytic organism, succumbed under a second infection, so that from our point of view no *tolerance* of the poison had been acquired. From some experiments of our own we consider that although no complete *immunity* had been acquired, a greater refractoriness to the action of the anthrax virus had been conferred owing to the production of a slight degree of *tolerance*, as evidenced by the disease running a more prolonged course, and although Pawlowsky does not lay any stress on this point the results of his experiments tend to the same conclusion. The action, accordingly, from the physiological point of view must be regarded as one consisting essentially of a temporary antagonism. Pawlowsky supposed that the phagocytes, rapidly devouring the *saprophytic* bacilli, acquired a greater capacity of acting on the *pathogenic* organism. The production of the same protective effect by means of the products makes this much less probable than that we have here to deal with one poison directly antagonising the effects of the other. There may be, perhaps, at the same time also a stimulating action on the tissues, so that the cells of our organism, which are paralysed from a physiological point of view on the introduction of the virulent germ, are able to react more vigorously on the invading microbe. How far the two factors come into operation in each case it is, at present, impossible to say.

Although we have just insisted on the necessity of regarding the nature of the process as *antidotal* in character, we have obtained certain results which at first sight appeared to be not in accordance with this view, for all those animals which passed through the disease by the aid of *sterilised pyocyanin cultures*, were perfectly refractory to the most virulent anthrax. We can only account for this on the supposition that as the injections were made intermittently, so the antagonising action of the pyocyanin was exerted only at stated periods, and in the intervals between its action the tissues had an opportunity of acquiring a certain tolerance of the specific poison. Where, however, the pyocyaneus organism was present there was a constant antagonising influence, in consequence of which the tissues could acquire only a much less perfect, if any, degree of tolerance.

In certain diseases, as malaria, relapsing fever, and erysipelas, where no permanent protection against a second attack is acquired, we must attribute the cessation of the disease to such a reaction of the organism. In a knowledge of what this consists in, and what conditions favour and produce it in each case, lies our only hope of affecting the course of such diseases. The production of a condition of tolerance of the poison—*immunity*—in a case already affected with the disease is only possible in such rare conditions as

[8] Salmon and Smith, On a New Method of producing from Contagious Diseases, Proc. Biol. Soc., Washington, vol. iii., Feb. 22nd, 1886.

[9] Wooldridge, Proc. Roy. Soc. London, p. 312, 1887; Pasteur and Perdrix, Comptes Rendus, tom. cvi., p. 322, 1888; Hankin, loc. cit.

[10] Foà und Bonome, Zeit. f. Hygiene, 1889.

[11] Roux et Chamberland, Annales de l'Institut Pasteur, 1887.

[12] Hueppe und Wood, Berliner Klin. Wochenschr., No. 16, 1889; THE LANCET, Dec. 7th, 1889.

[13] Heilung von Infections-krankheiten. Tageblatt der Versammlung Deutsche Naturforsch., p. 145, 1886, and Fortschritte der Medecin, No. v., S. 20, 1887.

[14] Virchow's Archiv, Bd. cviii., S. 484.

[15] Comptes Rendus, tom. cviii., p. 713, 1889. See also Charrin, La Maladie Pyocyanique, Paris, 1889.

[16] We give only those experiments which we have already communicated to the Académie Française, as these form a sufficient basis for the conclusions we here draw.

[17] Loc. cit.

[18] Loc. cit.

hydrophobia. There the knowledge of the precise time of the infection, the long period of incubation, and the restriction of the microbe almost exclusively to the nervous tissue, give us advantages not obtainable elsewhere. In other cases the introduction of more of the specific poison, in the hope of producing a *tolerance*, could only aggravate the disease. Our aim in the cases where the disease has already manifested itself must, therefore, be to *antagonise* the specific poison and to allow of the coming into play of the normal reactive powers of the tissues. This need not be by the products of microbes, as in our present experiments, but by drugs, as has already perhaps been shown clinically by the action of quinine in malaria. We cannot suppose that these act directly on the microbes as parasiticides, since Freudenreich[19] found that bacillus anthracis was precisely that organism that grew best of all in pyocyanin fluids outside the body, whilst those organisms whose products inhibited the growth of other pathogenic organisms outside the body exerted no inhibitory influence on the course of the disease which these organisms induced. We must, therefore, regard the action as indirect, produced either by antagonising the poison in its action on the tissues or by stimulating certain tissues to increased functional activity. It must be pointed out that the products of a microbe introduced with a disease germ need not always act in the direction of mitigating the course of the disease; it may act in precisely the reverse way, increasing the virulence of the attack. Thus G. H. Roger[20] has found that one of these indifferent organisms, Micrococcus prodigiosus, is able to convert a virus of *charbon symptomatique* (quarter evil), which is innocuous to rabbits, into a fatal affection. In this case we must suppose that in place of the *antagonism* of the poisons we have a *summation* of their action. This opens up for our consideration that very complex but most important practical question of the effect of a mixed infection on the course of a disease. Thus, in some inoculation experiments mentioned at the meetings of the British Medical Association in August, 1889, it was found that the inoculation of material from the subpleural tissue of suspected tuberculous cattle (three experiments), in which staphylococcus pyogenes aureus and albus as well as tubercle bacilli were present, gave rise to a very rapid production of small gelatinous points, containing only tubercle bacilli and opaque yellow, pyæmic-looking points, in which all three organisms were found. These appearances were met with in animals killed on the tenth day, and in one that died on the sixteenth day after inoculation. This would seem to indicate that the disease was rendered much more acute by the presence of these pyogenic organisms, a point on which some recent experiments of Pawlowsky's[21] throw further light. He made a series of simultaneous inoculations of tubercle bacillus and Streptococcus pyogenes and Bacillus pyocyaneus into the knee-joints of rabbits. The animal that received the latter along with tubercle died first—that is to say, on the twelfth day, and the post-mortem examination revealed suppuration in the knee-joint and grey tubercles in the lungs. In the case where Streptococcus pyogenes was the second organism injected, death did not, however, take place until the fifty-second day. A control rabbit inoculated with tubercle alone, on the other hand, did not die until the end of the third month. In the same way it has been noted that the Staphylococcus aureus and albus are much more virulent and rapid in their action when injected together than when inoculated separately. Pawlowsky seems to have concluded, as the result of his experiments, that tuberculosis of the joints is the result of a mixed infection, and he says that the general outcome of his experiments is that mixed infection renders local symptoms more complex, and at the same time lowers the general and tissue resistance.[22] In these cases we have apparently a cumulative action similar to that described by Roger in the case of symptomatic anthrax (quarter evil) and prodigiosus, and it is particularly noticeable that Micrococcus prodigiosus and Bacillus pyocyaneus, which in anthrax appear to exert an antidotal action in this disease (symptomatic anthrax) and in tubercle increase the virulence of the pathogenic organisms. Mixed infections have a further interest from the fact that they may increase the difficulty of discovering the ultimate and efficient causal agent of a disease. In swine plague several organisms have been described as the specific cause, and in a recent investigation of the disease we have found several organisms which seem to be pretty constantly present, the specific organism occurring often in relatively small numbers and being isolated only with difficulty, apparently on account of its pronounced *anaerobic* habit, which renders extremely difficult, or may even entirely prevent, its being isolated by the usual gelatine plate method. In the recent outbreak of the disease which occurred in Edinburgh and its neighbourhood, we have been able to recognise the same specific organism as that described in the swine fever of France and Germany (*Rouget* and *Schweinrothlauf*), and we are inclined to believe that the great diversity of opinion that exists among bacteriologists in this country and America is attributable, in great part, to the fact that this disease is, in its later stages at any rate, the result of a mixed infection.

This disease is of interest to us here in still another relation, as it throws into striking relief certain contingent relations of a mixed infection to which we have not yet had occasion to refer. Pasteur,[23] who first investigated the disease, described the organism as a micrococcus which appeared in the blood of the rabbit as a figure-of-eight form, and Baillet and Jolyet[24] afterwards published descriptions of (evidently) the same microbe as the specific cause of the disease. Both Schutz[25] and Schottelius[26] found, however, in the vaccines which Pasteur had prepared for the preventive inoculation of pigs, in addition to other organisms, the characteristic thin delicate bacilli which are the true cause of the disease. To the presence of this probably septicæmic microbe,[27] which would appear to be a frequent accompaniment of the disease in France, may perhaps be attributed the very remarkable results which Pasteur obtained in his inoculation experiments on animals. When he inoculated a series of pigeons the virus became more and more virulent, the pigeons of successive batches succumbing, in increasingly shorter periods, to the disease, and when this had attained its maximum the virus was also much more deadly to pigs. When, on the other hand, the disease was passed from rabbit to rabbit, the virulence gradually increased for these animals, while at the same time the organism became less and less active on pigs.[28] It was by this means that Pasteur had produced his vaccines, and both Schutz and Schottelius state that the organisms in these had really undergone attenuation. Flügge has repeated his inoculations of pigeons and rabbits with pure cultures, and has been unable to confirm Pasteur's observations in either case, and our own experiments, confined at present to rabbits, tend to support his conclusion. The difference in our results appears to be due to Pasteur having worked with cultures in which more than one organism was present. This leads us to consider more minutely the varying effect which this "mixed infection" may exert on different species of animals. The sensitiveness of an animal to a disease germ is to be referred essentially to a susceptibility to the specific toxine, inasmuch as when the most sensitive species of animal has once acquired a *tolerance* by a passing attack it exhibits a refractoriness to a subsequent infection similar to that of those species that have a natural immunity from the disease. But not only will the natural susceptibility of the animal to the toxine of the disease germ vary in different species, but also that susceptibility towards the products of the other organism which accompanies it in the "mixed infection"; so that a knowledge of how the two have acted in one species affords no criterion as to how they will act in another. Some of the facts at present to hand indicate that a species more sensitive to the disease germ may be more susceptible to the

[19] Pasteur's Annales, 1888, and Annale Micrographique, 1889.

[20] Comptes Rendus de la Société de Biologie, pp. 35 and 77, 1890.

[21] Sur les Formes mixtes de la Tuberculose des Articulations. Annales de l'Institut Pasteur, No. x., 1889.

[22] This point is discussed more fully by Woodhead and Hare in the **Journal of Anatomy**, 1887, and in Pathological Mycology, p. 12.

[23] Comptes Rendus, tom. xcv., 1882, and xcvii., 1883.

[24] Revue Vétér., 1884.

[25] Arbeiten aus dem Kaiserl. Gesundheitsamt., Bd. i., S. 58, 1886.

[26] Lydtin und Schottelius, Wiesbaden, 1885.

[27] This microbe was probably one of that group of septicæmias which consists of fowl cholera, Davaine's or Koch's rabbit septicæmia, and that organism which Gamaleia has cultivated from the intestine of fowls, all of which appear to be, as Hueppe has suggested, merely modifications of one and the same organism.

[28] The remarkable part of this statement is that the virus should have become more virulent for one species in proportion as it became less virulent for another. This would require the addition to our present conception of virulence as dependent on the poison-producing faculty of the microbe, of a view of adaptation on the special conditions present in a particular species, which might at the same time render it less virulent for another species—a view not, perhaps, in itself *a priori* very improbable, but one which we think should not be accepted until direct evidence can be adduced in its support.

antidotal treatment than a more refractory species, a result which we can readily understand if we reflect that the action of the products of the indifferent organism may vary in different species, and that a difference in this respect may more than compensate for any original greater susceptibility to the poison of the disease germ. In Pasteur's experiments on pigeons we appear to have a summation of the action of the poisons resulting in a real increase in the virulence of the organism, but in those on rabbits we have probably to do with a condition of things of quite another order. Pawlowsky noted in his experiments on rabbits infected with anthrax and erysipelas that the animals usually succumbed, not to the anthrax, but to the latter disease, the blood of the rabbit swarming with streptococci, although normally it suffers only a temporary attack from erysipelas, the microbe never being able to penetrate into the blood stream unless in such experiments as those of Wyssokowitschky,[29] where the general vitality of the system had been previously lowered by the exhibition of such a poison as chromate of ammonia.[30] We have had a similar experience; some of our rabbits dying, not of the anthrax, but of the usually harmless prodigiosus. The action of either erysipelas or prodigiosus appears to antagonise that of anthrax; whilst the action of the anthrax is superadded to that of the erysipelas and prodigiosus—that is to say, the antagonism is not only not mutual, but may from the one side be cumulative. When Pasteur inoculated his rabbits the micrococcus invaded the whole system, as is proved by his definite description of the form of the microbe as occurring in the blood of the rabbit, while the swine fever organism underwent a gradual process of attenuation in the passage from animal to animal, permitting the other organism to exert a greater and greater effect. The extreme complexity of the subject with which we are dealing must be apparent to all, as must also in consequence the danger which would be incurred by applying any of the results of bacterio-therapeutics obtained on the lower animals directly to the human subject. Our substitution of the products in place of the living organisms, however, minimises this risk as far as is at present possible. We have thus seen that in cases of mixed infection, where we assume that the modifying action on the course of the disease exerted by these indifferent organisms is due to their products, they can produce either an antidotal or a cumulative effect, and from a consideration of the fact that a number of organisms (erysipelas, prodigiosus, pyocyaneus, &c.) which presumably produce different toxines, act antidotally, it would appear that this is not a very uncommon action, and we are sanguine that exact pharmacological research on the ptomaines of specific diseases may indicate those drugs which we may hope will exert an antidotal action. Other factors than drugs, however, such as temperature, the state of irritability of the tissues, and similar conditions, also play certain *rôles* which at present require further investigation. The importance of obtaining a knowledge of those factors which prolong the course of the disease cannot be over-estimated, since, under these circumstances, the tissues have time to acquire a certain tolerance of the specific toxine and are then enabled to exert their devitalising action on the microbe. Thus when a susceptible species is inoculated with a vaccine the "tolerance" acquired by the tissues is able to keep pace with the poison production, so that, eventually, the reactive powers of the cells come into play, and recovery finally ensues. This acquired tolerance enables the animal to cope more successfully with the more rapid poison production of a stronger vaccine, and ultimately of the virulent organism.[31] We must, moreover, take into account the *attenuating* influence, at which we have already hinted, that the tissues may, and probably do, exert on the micro-organism, both locally, at the point of inoculation, and again in the course of recovery from the disease. In experiments of this nature where we wish to recognise the influence of the various factors on the course of the disease, we consider it a matter of very great importance to use a *modified* virus—that is, one just sufficient to kill, with certainty, the species of animal with which we are working, in order that the slightest deviations from the normal course of the disease may at once become apparent. The influence exerted by all those factors which affect either the local action of the tissues on the microbe, or favour the excretion, or antagonise the action of the specific poison, inasmuch as they tend to convert the *virulent* organism into a *vaccine*, can at once be appreciated. We are seeking in this way to estimate the influence of different factors brought into play either in prolonging the period of resistance to the onset of the disease, or in protecting the animal against an otherwise fatal attack.

Edinburgh.

[29] Zeit. f. Hygiene, Bd. i., Heft i., S. 45. Wratsch, 1887, No. 35.

[30] Salomonsen (Fortschritte der Medicin, Feb. 1886) has shown that the intoxication set up by the soluble poison of the jequirity bean permits of an invasion of the blood by many otherwise harmless micro-organisms, by which a true condition of infection of the animal is induced. We need only state here that we regard this action as not merely a devitalising one on the body as a whole, but as one more or less specific in its nature; one which may, for instance, favour the growth of one microbe more than another or more than any other.

[31] For more detailed criticism of Metschnikoff's theory of the reactions of the tissues on the microbe, see Wood, on the Enzyme Action in Lower Organisms. Proc. Roy. Soc. Edin., vol. xvi.

THE TREATMENT OF PROLAPSE OF THE RECTUM BY EXCISION.

BY FREDERICK TREVES, F.R.C.S.,

SURGEON TO, AND LECTURER ON ANATOMY AT, THE LONDON HOSPITAL.

THE purpose of this paper is to criticise the surgical procedures which are at the present time advised for the treatment of severe and intractable forms of prolapse of the rectum, and to suggest that the best, simplest, and most efficient mode of dealing with such cases is by the complete excision of the prolapsed part. Three cases are given in which this operation has been carried out. Prolapse of the rectum is most commonly met with at the two extremes of life—in quite young children and in those who are advanced in years. The frequency of the condition in children is explained by many circumstances, by a very susceptible reflex nerve apparatus, by an uncertain and feeble muscular control, by frequent digestive disturbances, by an unusual activity of the alimentary canal, and by the occurrence of many conditions involving straining, such as calculus in the bladder, phimosis, worms, polypi, scybala in the rectum, and diarrhœa. Moreover, in the infant the rectum lies rather in the abdomen than in the very small and shallow pelvic cavity, and is thus more directly exposed to pressure. The gut also is nearly vertical, and has a comparatively extensive meso-colon, and but loose lateral connexions. The sacrum is less curved in the child, and the prostate is small. It is in children, moreover, that intussusception is so frequent, and the conditions which would favour that lesion in one part of the bowel would favour prolapse in another. The ileo-cæcal aperture, about which intussusception is so common, is an internal anus, the anus of the small intestine. Tenesmus is a frequent feature in the developmental periods of prolapsus recti, just as contraction of a segment of the bowel would appear to be a necessary preliminary to invagination. As a pathological circumstance there is probably little difference between the two conditions, except such as depends upon locality. In a sickly child with a feeble muscular system an attack of whooping-cough may lead to a protrusion of the rectal mucous membrane. Mr. Harrison Cripps, in the excellent account of this affection given in his work on "Diseases of the Rectum and Anus," remarks that "in children, in addition to the prolonged straining, the prolapse is often coincident with some weakening illness, which causes absorption of the fat in the ischio-rectal fossæ, together with relaxation of the muscular fibres of the part." In the young prolapsus recti is usually an active and often an acute process. The protrusion may take place suddenly and be attended by violent symptoms. I have seen a child quite collapsed after the descent of the bowel. In the aged, on the other hand, the condition is usually due to gentler causes, is more gradual and more chronic, and may be described as a passive rather than as an active process. The tissues are relaxed, the muscles are enfeebled, and the nerve apparatus of the anus is dulled and irresponsive. The prolapse is commonly associated with prolonged expulsive efforts, such as may attend stricture, enlarged prostate, constipation, and chronic bronchitis. Two forms of prolapse are described by authors. There is the partial form, in which the mucous membrane is alone protruded, while the muscular coat remains unchanged in position. There is, on the other hand, the complete variety, in which the whole of

the coats of the rectum is prolapsed, and in which the lesion concerns not only the mucous and the muscular tunics, but possibly the serous coat also. The very loose connexion which exists between the mucous and muscular coats of the rectum greatly favours the development of a partial prolapse, and the pathology of intussusception would render it conceivable that in the complete variety the serous and fascial connexions of the bowel may offer but little resistance to the protrusion of the whole of the lower segment of the gut.

"In the 'complete prolapse,'" writes Mr. Harrison Cripps, "after the mucous membrane has slid as far as possible, it drags upon the muscular coat, thus producing the complete eversion of the bowel. It is important, then, to bear in mind that the one form is but an aggravation of the other (the partial variety), and that they both may commence in a similar way." In the usual description of the complete prolapse, it is assumed that the projecting tumour presents not only a double layer of mucous membrane, but also a double fold of the muscular wall of the bowel. It is inferred also that the position of the internal sphincter remains unchanged, that it still lies in association with the external sphincter, and that the apex of the protrusion is formed by a portion of the wall of the rectum which was normally at some distance above the anus. In the account of the third of the cases detailed below opportunity will be taken to criticise this description.

In the matter of treatment it is needless to say that the majority of the cases of prolapse of the rectum yield to simple measures—to rest, to the removal of the cause of the trouble, to the improvement of the general health, to the regulation of the bowels, and the use of astringent applications. In children the cases must be few indeed in which an active surgical interference is necessary. In the aged the question of a surgical measure may arise when all the usual means have failed, and the distress occasioned by the prolapse is such as to justify an operation. As a matter of common experience, however, the prolapse of the aged often induces so little inconvenience as to call for no radical measure, while the state of the patient's health is usually such as to forbid any but the most necessary of surgical operations.

The cases now to be described all concern subjects who had not passed beyond the period of middle age; the prolapse in each case had existed for some years, had resisted the milder forms of treatment, and had given rise to very considerable distress. It is in such examples of prolapse of the rectum that treatment by operation is, doubtless, called for.

CASE 1.—Alfred H——, a clerk, aged thirty-seven, was admitted into the London Hospital on Jan. 17th, 1889, with prolapse of the rectum. The man was thin, feeble, and nervous, and gave a very distressful account of the last few years of his life. The prolapse was first noticed eleven years ago, when it appeared in connexion with chronic diarrhœa. For four years it gave him little trouble. It came down usually, but not always, after each act of defecation. It was easily reduced, and he was not prevented from following his employment. Seven years ago the bowel came down while he was stepping into a cab. This was the first occasion on which it had descended independently of defecation. He reduced it with difficulty, and since this period the rectum has given him so much trouble that he has been compelled to give up his occupation. The reduction of the prolapse was attended with increasing difficulty, and the protrusion soon became to a great extent irreducible. After trying various trusses he at last adopted a complicated cone-shaped compress made of linen, which he had worn for the last five years or so. There was nothing in his history that bore upon the case. He had never had syphilis; he had suffered from no urinary troubles and had at no time been the subject of hæmorrhoids or of rectal polypi. The prolapse gave him great distress. The action of the bowels was attended with severe tenesmus and exhausting pain. For some years he had habituated himself to passing a motion on a certain day once a week. He prepared himself for this event by a vigorous aperient, and he stated that when the bowels did act he would maintain the squatting position for some hours, and would remain exhausted for the remainder of the day. There was a considerable mucous discharge from the bowel, mixed occasionally with blood. The patient had become quite hypochondriacal. He suffered from extreme depression, his whole being centred upon his prolapse; he had adopted a very exuberant and florid language in describing his symptoms, and his everted rectum appeared to absorb his exclusive attention. The prolapse presented the ordinary appearance, and measured five inches in length. It was composed apparently of mucous membrane only. It could be reduced with difficulty, but immediately reappeared upon the support of the hand being removed.

On Jan. 19th I carried out the following operation. The rectum having been well emptied by an aperient, followed by an enema, the patient was anæsthetised and placed in the lithotomy position. Clover's crutch was employed. The buttocks were well raised, partly for the purpose of bringing the region in more convenient position for operation, and partly that the coils of small intestine might be to some extent withdrawn from the pelvic floor in the event of there being any protrusion of the peritoneum. The first step of the operation consisted in demonstrating the full extent of the prolapse. The mucous membrane within the lumen of the prolapse, was seized at some height above the aperture in the bowel, with tongue forceps and pulled down. Three pairs of such forceps were employed, and were applied at different points on the rectal wall; and, when it was evident that the whole of the relaxed mucous membrane was entirely drawn down, the forceps were allowed to remain attached. They served to indicate the real apex of the protrusion, and to allow a hold to be taken of the part, while their weight prevented any great recession of the everted mucous membrane. I now made a circular cut around the base of the prolapse at the exact spot where the skin joined the mucous membrane. The incision involved the mucous membrane only. This mucous membrane I next proceeded to dissect off, turning the whole of it down like a cuff. It was dissected up entirely with scissors and forceps only. When the separation was complete the prolapse had a hour-glass shape, the waist of the hour-glass corresponding to the site of the apex of the protrusion. Nothing but a raw surface was visible, and the prolapse was of course doubled in length. The bleeding was quite insignificant. The object of this dissection was to clearly demonstrate the nature of the tissues forming the prolapse, and which were about to be excised. The external sphincter, much hypertrophied, was now exposed; and within it the internal sphincter could be defined. I now introduced my left forefinger into the lumen of the prolapse, and ascertained that the protrusion was composed of mucous membrane only. This layer of mucous membrane—the inner layer—I next divided at the level of the anus with scissors. As each inch or so was divided the cut margin was seized with pressure forceps. This allowed of the immediate arrest of all bleeding, and also prevented the mucous membrane from being withdrawn into the rectum. The prolapse was in this way completely excised, and some six or eight pressure forceps were left attached to the cut mucous membrane of the rectum. These forceps were removed one at a time. If any bleeding point was noticed it was ligatured with catgut. The mucous membrane was then attached to the skin at the margin of the anus, with sutures of silkworm gut. Eight bleeding vessels were ligatured, and fifteen silkworm-gut sutures were applied.

It will be understood that the piece removed represented the whole of the prolapse unfolded, and appeared, therefore, as a tube of mucous membrane with the epithelial lining inside, and which measured, when stretched out, ten inches. The operation was simple, uncomplicated, and attended with but trifling hæmorrhage. The part was dressed with iodoform on wool. In this case I was tempted to excise a portion of the external sphincter in order to lessen the size of the anus, which, as it appeared at the close of the operation, would have admitted four fingers. I removed about one inch of the muscle and brought the divided ends together with three catgut sutures. This proceeding was unnecessary, and gave rise during the after-treatment to some pain and much tenesmus. I have not since carried it out. The parts were frequently washed with boracic lotion. The sutures were removed on the tenth day. The bowels were opened naturally on the fifth day. The patient recovered without any bad symptom. There was a little incontinence at first, but at the end of a month the part was sound and the function of the anus entirely restored. The patient's recovery was needlessly prolonged and hampered by his nervous condition and his state of mental depression; but the cure of the prolapse was complete.

(To be concluded.)

ON THE UTILITY OF MASSAGE IN THE TREATMENT OF DISEASES OF SOME OF THE ABDOMINAL ORGANS.

BY W. R. THOMAS, M.D., M.R.C.P.,
CONSULTING PHYSICIAN TO THE SHEFFIELD PUBLIC HOSPITAL; LATE LECTURER ON MEDICINE, SHEFFIELD MEDICAL SCHOOL.

MASSAGE—or rubbing—as a method of treatment has been known for ages, but more attention has been paid to it during recent years by the medical profession generally, especially in cases of paralysis of the several extremities, owing to the recommendations of Dr. Weir Mitchell, Dr. Playfair, and others; but I do not think that we, as a profession, sufficiently appreciate the efficacy of this method of treatment of diseases of some of the abdominal organs. It is an old method, which has been known to us since our childhood as medical practitioners, therefore we neglect it, and keep looking out for something new. I shall not relate a number of cases, but shall choose two typical ones out of a large number which, during the last twenty-six years, have come under my notice, to illustrate the efficacy of the treatment.

A man was sent into hospital from the country suffering from a large swelling in the abdomen, supposed to be malignant, which by pressure caused obstruction. He said that his bowels had not been moved for six weeks—of course we had to take his word for that. He could not take much food, was very sick, getting thinner and weaker every day, but there was no cachexia of malignancy. On examining the abdomen I found that it was immense in size, very tympanitic everywhere except on the left side, where there was a large swelling about six inches in length and three inches in breadth, but this varied. It was irregularly rounded in shape from side to side and felt very hard, I may almost say craggy; indeed, I am not surprised at anyone mistaking it for a malignant tumour. I recommended large injections of thin gruel to be introduced by means of the long tube twice a day, and the mass to be well and carefully rubbed twice a day from above downwards, especially at the lowest part; very little fæcal matter was passed during the first two days, but on the third day a large quantity was evacuated. The passage daily of masses of hard fetid fæces continued for about four days, the swelling entirely disappeared, and the patient was allowed to go out. In a few weeks this man presented himself as an out-patient, suffering again from accumulation and obstruction in the left colon. This time massage and large injections at home soon relieved him. The descending colon seemed to have lost its tonicity.

During the last twelve months, since I have been at Bournemouth, I have had some interesting cases, one of which I shall relate. A lady, about fifty-four years of age, who had many years ago suffered from a severe attack of typhlitis, was now laid up, and complained of pain in the right iliac region once more. The bowels had been rather costive for some time, but were moved every day or every other day. They were now more costive than usual, the appetite was poor, there was slight tenderness in the right iliac region, and a large swelling extending from there to the right hypochondriac region. There were great debility and anæmia, and the pulse was rapid and small. Evidently the colon was distended by a hard fæcal mass from the cæcum to the right angle. Very large injections twice a day were recommended, and gentle rubbing over the upper end of the right colon. Very little fæcal matter was passed during the first twenty-four hours, but after that the quantity increased, and hard scybalous masses were evacuated daily until the swelling entirely disappeared. In this case the massage was brought to bear on to the upper third of the mass only at first, as the cæcum was tender, but as the scybala became dislodged above and extruded the tenderness became less. Ultimately the whole mass was removed, and the patient got quite well. Aperient remedies given before the illness came on never seemed to act thoroughly, and although given at one period to assist other treatment they never satisfactorily acted on the bowels.

It was evidently intended by nature that the muscular movements of the intestinal canal should be aided by active contractions of the muscles of the abdomen, and it is equally evident that the liver and gall-bladder should be pressed upon directly and indirectly by the abdominal muscles, including the diaphragm; and if gentlemen will persist in driving to their places of business and back, and ladies will, because they can afford to keep their carriages, go out every afternoon sitting in one position, and hardly ever have a real walk from year's end to year's end, they must expect to suffer. They have done their best to bring on disease. The liver becomes immense in size, inspissated bile remains in the tubes, the same lies dormant in the gall-bladder, and gall-stones form. Why? Because it and the gall-bladder are never well kneaded as they would be by the abdominal muscles if the patient took reasonable exercise; and in the same way the thin muscular walls of the intestines can never propel their contents, unless aided by outside pressure by the abdominal muscles.

Wealthy patients will drink gallons of the several aperient waters in a year to act on the bowels; but it is almost impossible to persuade any of them to take a little exercise, which would, as I have shown, assist the thin muscular walls in propelling their contents, and also express an increased quantity of bile, an aperient, into the duodenum.

Whenever a patient comes to me now who gives a history of past trouble in cæcum, colon, or sigmoid flexure, and complains of constipation, excessive fulness, flatulence, or pain, I invariably make a careful examination; and almost as invariably find an accumulation which probably if neglected would end in inflammatory mischief, or perhaps ulceration; but which is soon relieved by injections and careful rubbing. Indeed, whenever any patient who leads a sedentary life, especially if inclined to be stout, complains of constipation and such abdominal symptoms as fulness, flatulence, &c., I examine, and often find an accumulation somewhere. I adopt the same treatment and follow it up by exercise, diet, and aperient remedies.

Massage is a powerful agent for good or for evil, and great care must be used in choosing proper cases. If the bowel is actually inflamed or ulcerated increase of mischief or perforation might ensue; but I must say in cases of typhlitis, with accumulation in the ascending colon, more can often be done than prescribing morphia, diet, and rest, and thus leaving the cause of all the mischief still there to irritate. I have seen injections and careful rubbing of the upper part of the colon, away from the seat of tenderness, give rise to easy evacuations, and the ascending colon has been gradually emptied from above downwards, without excessive action of the muscular coats and risk, but of course the treatment has been carried out with great care, and I have never seen any case injured by such. Of course I am speaking only of cases where there is accumulation in front of the cæcum. I send these remarks for publication, and choose these two typical cases, not because there is anything new in the treatment, but simply because I believe we do not sufficiently utilise the valuable aids we have and we know of. I feel sure that scores of cases of obstruction, of typhlitis, and ulceration of bowels could be prevented by this kind of treatment. Instead of examining carefully such cases and treating at once, we often are satisfied with asking questions only, and prescribing pills which perhaps never thoroughly open the bowels, or, at all events, never remove the offending mass; and the same remarks will apply to the congested or fatty liver, or that in which the bile becomes inspissated and incipient obstruction is present. It is astonishing how the size of the organ becomes diminished, and the symptoms disappear after rubbing and kneading once a day for from two to four weeks, assisted, of course, by other treatment.

Bournemouth.

A CASE OF

POISONING BY PHOSPHORUS, PRESUMABLY CAUSED BY THE INUNCTION OF RAT PASTE.

BY LEONARD HILL, M.R.C.S., L.R.C.P.

WHILE taking the Cardiff Infirmary out-patient department for Mr. Rhys Griffiths on Sept. 14th, 1889, H. D——, a servant maid, aged fifteen, came as a patient. She complained of pains all over her, great headache, vomiting of blood twice, faintness and great languor, unquenchable thirst, and inability to take any food. A week previously she had been in perfect health. The illness began on Sept. 7th with headache and

faintness. Pains in the back had next become the most intense symptom. On the 13th she had vomited a pint of blood, "dark thick stuff." The next day she had again vomited one or two ounces of blood. On the 13th she noticed she had become yellow. Her bowels throughout had been very costive. On examination I found that the patient showed extreme prostration; her cheeks were brightly flushed, the tongue dry and black, and the breath extremely offensive. The pulse was 120, weak, thready, quick, and very compressible. Thinking the case was one of some acute specific fever probably, I took the temperature and was surprised to find it 98·5°. The girl was plump and well nourished; there was well-marked jaundice of face and body. The heart and lungs were normal. The whole of the abdomen was very tender to palpation. The liver dulness was diminished, and the liver area very tender. From the above symptoms, and from especially the history of sudden onset, and the normal temperature, I came to the conclusion that the case was one of acute yellow atrophy, or phosphorus poisoning. On cross-examination, she could recall having taken nothing injurious or poisonous of any kind; and after beating about with non-leading questions in vain, I asked her whether she had had any rat poison in her presence before her illness. She at once answered, as if it were quite a new idea to her as connected with her illness, that she had had some, which her mistress had given her to spread for rats. She stated most positively she had taken none, and had not touched it except with a knife with which she spread it on bread. However, the admission of possession seemed sufficient, and I admitted her on the phosphorus-poisoning diagnosis. She passed into a condition of coma the same evening, and after renewed hæmatemesis died at 7 A.M. next morning. Her urine was secured previously, and found to be very highly coloured, with a deposit of epithelial cells like bladder cells; free from albumen; it gave most brilliantly the crimson reaction with mercurous nitrate typical of tyrosin, and on evaporation showed numberless sheaths of fine tyrosin needles and transparent glassy plates of leucin. Besides these, there were numerous hedgehog balls of coloured acicular crystals looking like uric acid.

The necropsy was made by Mr. Thomas, house-surgeon, thirty hours after death. The weather was warm. The rigidity was marked. The body was plump and well formed, but generally jaundiced. There were no petechiæ. A liquid like coffee-grounds stuff streamed from the nose. On opening the abdomen the liver was found to be shrunk out of sight beneath the ribs. The bowels were distended and darkly stained. The pericardium contained two ounces of straw-coloured fluid. The left side of the heart was contracted, and the right flaccid; there were no clots. The tissue was friable and stained yellow. The lungs were slightly congested. The stomach contained about two ounces of "coffee-ground stuff." The mucous membrane was stained black on the top of the rugæ, and was very thick, soft, and friable all over. The intestines were full of "coffee-ground stuff" in the ileum and jejunum. The mucous membrane was in the same condition as that of the stomach. The large intestine was full of black-stained soft fæces. The liver was small in size and solid in consistence; it weighed forty-five ounces and a half. The capsule was adherent and thickened. The gall-bladder was empty. In the middle of the under surface of the right lobe was a natural fissure half dividing it into two lobes. The surface was of a uniform, bright chrome-yellow colour. On section it was found to be soft, intensely yellow, friable, greasy to the touch, and showing the lobules clearly marked out with fatty and congested areas. The liver resembled when broken yellow fæces more nearly than anything else. The cortex of the kidneys was very pale, soft, and friable; pyramids congested; capsule normal. The spleen was of normal size, pale, and diffluent. On opening the skull Mr. Thomas detected a distinct smell of phosphorus, and on making sections into the brain this was apparent to all in the room. The brain was otherwise normal. No luminosity could be obtained from the organs. In the inquest held on the case the most interesting fact was obtained that the girl had been giving a "dark *séance*" to other girls, and had rubbed the paste into her hands and face to produce blue flame, just before the onset of illness. She denied to me most positively having taken any by the mouth; and though she told me nothing of the *séance* she had said that she felt bad first after spreading the paste for rats. Probably she was ashamed of the *séance*, and had really felt bad after anointing herself for this. The question therefore arises whether death could occur from inunction of rat paste, which seems probable here. There is no case on record, I believe, of such a death. Could she have rubbed the paste on her teeth and tongue, to emit blue flame possibly? From the severity of symptoms it looks as if much poison had been absorbed. There was no cause for suspecting suicide; the hymen was intact, and the uterus appeared to be just menstruating, a Graafian follicle having just ruptured in the left ovary, and her whole bearing was utterly unlike a suicide. Another point of interest in the case is the fact that the poison could be diagnosed from the symptoms alone. Had I been a believer in acute yellow atrophy as a disease apart from phosphorus poisoning, I should probably have put down the case to that, but believing the two to be one and the same thing I was sufficiently pertinacious in my cross-examination to hit on the right tract and to prove the necessary possession of phosphorus. The patient died in the usual time, on the eighth day after initial symptoms.

University College Hospital, W.C.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

LARGE VESICAL CALCULI REMOVED BY LITHOTRITY.

BY G. BUCKSTON BROWNE.

DR. LEWIS MARSHALL'S case of large uric-acid calculus weighing two ounces and a half, reported in THE LANCET of Feb. 15th, is a good one, but in mentioning two ounces and three-quarters as about the limit of modern lithotrity he is not saying all that can be said for the operation, as the following cases taken from my note-book will show.

CASE 1.—J. P——, aged sixty-four. Uric-acid calculus; weight two ounces and three-quarters. Seen with Dr. Herbert Renshaw of Sale. Successful; no return.

CASE 2.—R. W. W——, aged fifty-seven. Uric-acid calculus; weight three ounces and seven drachms. Seen with Dr. Hardyman of Cardiff. Successful; a small calculus required removal eleven months afterwards.

CASE 3.—Dr. H. G——, aged sixty-five. Cystine; weight two ounces and a quarter. In correspondence with Mr. Cadge of Norwich about the case, and Dr. Salter of Tolleshunt D'Arcy was present at the operation. Successful. Owing to the great size of the stone (for cystine is light) a London operator had proposed supra-pubic lithotomy.

CASE 4.—T. A——, aged seventy-nine. Uric-acid calculus, very hard; weight three ounces and thirty grains. Successful.

CASE 5.—F. H——, aged seventy. Uric-acid calculus mixed with phosphates; weight three ounces, five drachms, thirty grains. Seen with Mr. Manley Sims. Successful.

It will thus be seen that I have three times crushed and removed stones weighing over three ounces, and that once I have been within a drachm of four ounces. All these stones were (except in one instance) removed by one operation, and the proceeding only in one case occupied more than an hour.

Wimpole-street, W.

DISEASE OF THE HEART RESULTING FROM EMOTIONAL CAUSES.

BY DR. ROBERT LEE.

IN the discussion which not long ago occurred at the Royal Medical and Chirurgical Society on the connexion between chorea and rheumatism, a question of great importance was raised which has not yet received the attention it deserves: Is it possible for emotional disturbances, for fright, anxiety, or worry to cause disease of the heart? The question is one of rather wide interest, because the pathologist, the metaphysician, and especially the clinical observer, are equally entitled to deal with it. It will probably occur to those who

have studied the etiology of Graves' disease that we should be prepared to find in this class of cases some evidence that disorder of the circulatory system may arise from purely emotional disturbance. A case was under my care in the year 1882, which I am induced to publish as contributing to the interesting question above referred to. The patient had been nurse in a family with which I was well acquainted. She was twenty years of age, a well-grown girl, with good family antecedents, and without history of any disease possibly affecting the heart. For eighteen months she had been gradually losing health and strength, and developing the symptoms from which she was suffering when I saw her. These were marked debility, slight anæmia, and troublesome palpitation of the heart. She could not walk without distress from breath-shortness; she had pains in the thighs and some swelling and induration of the tissues, such as to suggest phlebitis of the saphena or deep femoral veins. The cardiac pulsations were generally 140 per minute; they would rise to 150 if she got up or if she were the least excited. After rest in bed and treatment the pulsations diminished to 120 for a few days, but returned to the higher number. Thus she continued for two months, with little if any improvement in respect of the condition of the heart, though relieved of local pains and feeling generally somewhat stronger. Digitalis did not have any effect in this case, but small doses of opium at first quieted the heart. The cause which was assigned by the patient for this condition of ill-health was the following; and by evidence from other sources the absolute truth of her statement was confirmed. One day, when sitting in the nursery with the children, their father came into the room in a state of mental derangement, and seizing hold of the youngest, an infant, acted with the apparent intention of throwing it out of the window. The girl was so overcome by terror that, as she told me, she was unable to move or speak. From this occurrence she dated her illness. The case resembled in many respects one of Graves' disease, with the exception that there was no protuberance of the eyeballs or enlargement of the thyroid. The heart's action was regular, though rapid; the pulsations strong, and evident to the eye. There was also increased pulsation in the large arteries in the neck. There was a faint systolic bruit heard over the apex area. At the end of two months the patient returned home, and I have not heard what course the malady took since that time. It must have been observed that irregularity and increased pulsation of the heart frequently occur in children suffering from chorea, when there is no association of chorea with rheumatism, and no evidence of valvular affection. It seems probable that this peculiar symptom of increased cardiac pulsation is due rather to derangement of the nervous system of the heart than to a distinct organic lesion of the valvular, muscular, or other tissues. Although it may be impossible in our present state of pathological knowledge to give any explanation of the nature of the morbid condition of the nervous system of the heart which is indicated by increased pulsation or irregularity of action, and which is attributed to emotional disturbance, it is well to admit the clinical evidence of its possibility; and generally, though such derangement of the heart's action may be of temporary duration, occasionally, though rarely, it may be of more serious and permanent character, as in the case briefly related above.

Savile-row, W.

CASE OF PEMPHIGUS.

By WILLIAM WALLACE, M.D.

THE following notes of a case of pemphigus may be of interest to some of the readers of THE LANCET. The comparative rarity of the disease is my excuse for publishing them.

On Dec. 13th, 1889, I was called in to see a female infant aged eleven days, the child of Mrs. H——. The mother had borne fifteen children, of whom seven were living. Of the other eight, one was stillborn and the other seven all died under eight months from bronchitis or inflammation (presumably of the lungs). None of the children had ever had any skin affection, although several had discharges from the ears (probably result of eczema of external ear). There was no history of syphilis in either mother or father. No hereditary tendency can be made out, although it has been found to exist in several instances. The first bulla was seen on a finger when the infant was only four days old. Other bullæ then came out on the face, neck, &c. On examining the child, I found on the left cheek eleven circular patches, from which the epidermis had been detached, and which I concluded had been blebs. On the nose were two or three small yellow crusts about the size of a pea. On the right cheek there were remains of several other bullæ. Under the chin and on the neck were several bullæ an inch in diameter, nearly all the epidermis of which had been removed. The exposed surface thus formed did not appear at all irritable or inflamed. There was no ulceration visible anywhere. On the left hand (or, I should say, hand and arm) was a very large bulla, which extended from above the wrist-joint to the first joint of the thumb. It covered the radial half of the wrist and the whole of the thenar eminence. Another bleb involved the whole of the left middle fingers. The contents of these two bullæ had a milky appearance. On the right hand one bulla covered the thenar eminence and anterior surface of the thumb, and its contents had a similar appearance to the last. On the outer side of the leg (right) were two unbroken bullæ covering a surface corresponding to the lower half of the external surface of the thigh and upper fourth of the right foreleg. One large bulla, from which the epidermis had been removed, had affected the anterior surface of the concha of the left ear. On Dec. 14th a bulla, about an inch in diameter, came out behind the left knee-joint, and several smaller ones behind the thighs. There were several more bullæ by the 17th on the scalp. One large bulla now covers the inner half of the dorsal aspect of the right hand and wrist. The epidermis of the back of the fingers of this hand had been removed, adhering to the lint covering them. The two large bullæ previously noted had joined together. No more blebs had appeared by Dec. 19th. The crusts of bullæ on the face were shed, leaving only slight reddish stains. The large bulla on the outside of the right leg was dry; a crust occupied its place, the crust being thicker at its circumference. On the 30th all the crusts had come off the limbs and face and several from the scalp. There were only a few on the scalp. No eruption of fresh bullæ had taken place.

The remedies which I used were citrate of ammoniated iron internally and oxide of zinc used as a dust.

Hucknall Huthwaite.

DOUBLE DISLOCATION OF THE SHOULDERS.

By ALEX. MILNE, M.B.

DOUBLE DISLOCATION of the shoulders is stated, in an annotation on the subject in THE LANCET of Jan. 11th, to be a rare accident, and the number of cases on record to be small. To add to the number, I may be allowed to cite the following case, which I reduced when house surgeon to the Dewsbury Infirmary two years ago. The patient, a man aged sixty, employed in the construction of bridges, was brought to the infirmary suffering from subcoracoid dislocation of both shoulders. The injury had been produced by his falling down a distance of about ten feet between the scaffolding and the bridge in course of construction. Both his arms, stretched above his head, were suddenly caught in his descent, and the jerk had been sufficient to dislocate both shoulders. According to his statement, the right shoulder had been dislocated fourteen years previously, and the left one six years before, and in both cases the accident had happened in precisely the same way as in the last instance.

Recently my brother, Mr. J. B. Milne, and I reduced with very little trouble and without an anæsthetic a subglenoid dislocation of the shoulder of five weeks' standing in a woman by a method that seems a good one for this variety. One person pulls on the arm at right angles to the body, while the other, with his heel in the axilla, pulls on a towel round the top of the shoulder. The head of the humerus, being thus pulled away from the chest wall and pressed upwards by the heel, the scapula at the same time being pulled down, readily slips into the glenoid cavity.

Dewsbury.

NEW INFIRMARY FOR GLASGOW.—A new infirmary, designed to meet the necessities of one side of the city, was opened by the Duke of Argyll on the 14th inst. Accommodation has been provided for about eighty patients.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

THE GREAT NORTHERN HOSPITAL.

STRANGULATED HERNIA IN A WOMAN AGED EIGHTY; HERNIOTOMY NECESSITATING ABDOMINAL SECTION; RECOVERY; REMARKS.

(Under the care of Mr. HERBERT W. ALLINGHAM.)

THERE are many points of interest in this case, most of which are indicated in the remarks. For two days before admission to the hospital there had been absolute constipation and constant vomiting, also much pain, and these symptoms pointed to strangulation of intestine rather than to strangulation of omentum, for in the latter condition the signs are more those of peritonitis, with incomplete obstruction and pain in the abdomen and in the hernia. We therefore agree with Mr. Allingham that the urgent symptoms were chiefly due to the twist in the transverse colon, and not to the condition of the contents of the hernial sac. It was a difficult case to treat, and the operation was necessarily extensive. There was a consensus of opinion amongst the speakers at the third French Congress of Surgeons in 1888, that the danger in aseptic operations for hernia only exists in very old subjects, when the hernial tumour is so large as to ulcerate the integuments or when the removal of a large part of the omentum is necessary. According to Andaregg[1] excision of the omentum increases the risk of the operation for hernia by 2 per cent., owing to the occurrence of hæmorrhage in the stump. The old rule with regard to the management of the omentum was: "When omentum is sloughing or nearly sloughing leave it that it may cast its sloughs."[2] Now the recognised treatment is that omental protrusions should always be resected, the stump being carefully ligatured and returned to the abdomen. The advantages of this method in the present case are obvious. Examination of the omentum, with the intention of following out the more modern treatment, revealed the extent of the disease, and enabled the large amount of gangrenous omentum to be discovered and removed, without which and the replacement of the twisted intestine the case must have terminated fatally. For the following account we are indebted to Mr. P. R. W. Santi, house surgeon.

Anne C——, aged eighty, was admitted into the Great Northern Hospital, Holloway, on Dec. 17th, 1889, with symptoms of strangulated hernia. She said she thought she had been ruptured about six months; the hernia came on gradually, and had increased of late. She had never worn a truss for it; had had attacks of bad constipation and sometimes pain in the rupture. On Dec. 14th she was seized with pain in the swelling, which had slightly increased in size. Bowels acted freely, and there was no vomiting. On the 15th the pain was worse, and vomiting set in; she was sick three or four times in the day. Bowels acted slightly only. From the evening of the 15th to the evening of the 17th, when she was brought to the hospital and admitted, there was absolute constipation and constant vomiting, also much pain in the swelling. The patient was a hale old woman of eighty, but very stout. She had no cough or other ailment beyond the hernia. In the right inguinal region there was a swelling as large as a good-sized orange, very painful when touched, slightly red on the surface, hard to the feel, and dull on percussion, with no impulse on coughing. The abdomen was very tender, but there was no swelling or tympanites. The tongue was dry, and the patient had an anxious drawn expression of the face. Pulse 120, fairly strong.

Chloroform having been given, Mr. Allingham, assisted by Mr. Santi, proceeded to cut down on the hernia. The sac was quickly exposed and opened, and its contents found to be a large piece of semi-gangrenous omentum, but no gut. The omentum was found to be in too bad a condition to reduce, and therefore gentle traction was made on it in order to get a healthy piece to transfix and ligature. Though a little could in this way be pulled down, it was all in the same semi-gangrenous condition, so it was decided to further explore from the hernial wound. The abdominal parietes, including the peritoneum, was divided upwards with scissors for about two or three inches, the finger acting as director. It was then found that nearly the whole omentum was inflamed and matted together, and twisted five half turns, so causing the transverse colon to turn over on itself. The entire mass with the intestine was drawn out of the abdomen and carefully examined. After untwisting the omentum it was ligatured at its upper and attached part, where it was healthy, and the whole of the omentum cut off. Carbolised Chinese twist was used as a ligature. The intestine with the omental stump was returned into the abdomen. The part of the wound which was made in order to expose the omentum was closed with deep and superficial silkworm-gut sutures. The lower part of the wound with the sac was then dealt with. It was separated from the surrounding tissue and found to be a bis-sac, there being a constriction between the lower and upper part of the sac, and the upper part was found to extend up between the abdominal muscles (interstitial hernia). The upper and lower parts of the sac were freed from the surrounding tissues and removed, the neck being ligatured. The wound was then closed with a continuous silk suture, irrigated with 1 in 40 carbolic solution, and dressed antiseptically. The patient, who stood the operation remarkably well, was put to bed, and hot bottles applied. She was also allowed to lie in any position she liked.

Dec. 18th.—Had a fair night, sleeping for five hours without any opiate. Abdomen soft and no pain or swelling. Wound dressed, looking well; tongue clearing up. Temperature normal. No cough.

20th.—The bowels acted naturally.

On the 23rd the deep abdominal sutures were removed. On the 31st the lower wound was quite healed, but the upper wound had given way superficially and had to be strapped daily. The temperature throughout remained normal. On Jan. 6th, 1890, the patient had ordinary diet, and on Jan. 13th she was discharged, with a healthy granulating wound at the upper part of the incision and in capital general health.

Remarks by Mr. HERBERT ALLINGHAM.—The age of the patient—namely, eighty,—taken with the history of a strangulated hernia of nearly four days' duration, coupled with her extreme obesity, made the prognosis of the case grave. Further, when operated on, the thickened, inflamed, and semi-gangrenous condition of the omentum, and the necessity of having to do an irregular abdominal section, were great additional risks. The points of interest in the case were the curious condition of the omentum, the fact of its being twisted five half turns on itself, and so causing a kink in the transverse colon. Again, the condition of the sac was uncommon, the upper part extending between the layers of abdominal muscles, constituting an interstitial hernia. The explanation of the twisted condition of the omentum does not seem quite clear. Apart from the interesting condition of the sac and its contents, the case seems worthy of record as an instance of successful abdominal surgery occurring in a patient of eighty years of age.

[1] Sajous, 1888, vol. iii., p. 140.
[2] Paget: Clinical Lectures, p. 143.

LAMBETH INFIRMARY.

RUPTURE OF HERNIAL COVERINGS, WITH PROTRUSION OF INTESTINE; RECOVERY.

(Under the care of Dr. ROBERT H. LLOYD, Medical Superintendent.

CASES similar to that which is described by Dr. Lloyd are of considerable rarity, and a reference to those that can be found in medical literature will be of interest to our readers. Mr. Pitts[1] brought a case before the Medical Society of London where the coverings of a large femoral hernia had suddenly given way and a portion of intestine was protruding for several hours before reduction. The woman, aged forty-six, had suffered from the hernia for twenty years, and had required herniotomy three years before. She was the

[1] THE LANCET, vol. i. 1888, p. 585.

subject of frequent cough, and ulceration had caused her to omit her truss for a time. The immediate rupture was caused by violent sneezing when going upstairs. The rent, which was situated above the old cicatrix, was about one inch long. The publication of this case induced Mr. J. Jones[2] to describe one like it which had come under his observation in Bangor some years before. An Irishwoman aged thirty-five, who had suffered from irreducible and pendulous femoral hernia for many years, sat down suddenly on a stool with a child in her arms, and the tumour, which was underneath, was ruptured, the rent being four inches in length. As the occurrence was regarded as fatal, little care was taken to clean the intestine, dirt adhering to the bowel when it was returned from contact with the floor; also soap from her washing dress. The continuous suture was used to the sac. There had been no weakening of the hernia coverings from previous disease or operation. The coverings of both inguinal and umbilical herniæ have given way under sudden strain. We have published a case of the former,[3] that of a coal-carter aged fifty-six, who was treated by Mr. Keetley at the West London Hospital. There had been a left inguinal hernia for twenty years, and the bowel protruded through a clean tear three inches long, which appeared to be through the scar of an operation wound made five years before. He caused the injury by jumping off his cart. After he found out the condition he walked for some distance before going to the hospital. He did not complain of pain, and there was no shock. Mr. C. A. Key[4] met with a case in which the coverings of a large scrotal hernia were torn through, with consequent prolapse of the intestine to a considerable extent. This was, however, the result of much violence, as there were other injuries, including a compound fracture of the thigh, a fracture of the leg, and a dislocation of the humerus. A boy ten years old was seen by Mr. Adams,[5] in Dublin, with protrusion of the intestine in the right groin and peritonitis of some hours' standing. He was a delicate, emaciated, and neglected child, suffering from Pott's disease and a violent attack of whooping-cough. He had had an intra-inguinal hernia, with a chronic abscess in front, associated with a fistula, and, during a paroxysm of coughing, the intestine had been forced through this opening. Death occurred rapidly from peritonitis. Mr. Keetley refers in his remarks to a case under the care of Mr. Holmes Coote, who was called upon to return intestine which had escaped through a rent in the coverings of an umbilical hernia. The patient, a lady, ultimately recovered. No mention is made of any cause of weakness of the parts which would predispose to the rupture. In the case of the woman described by M. Mersenne,[6] who was suffering from phthisis and died six weeks after the accident from that disease, there had been preceding ulceration of the skin, and the coverings of the hernia were ruptured by the cough. It is a curious fact that these patients in whom the bowel prolapsed in consequence of rupture of the hernial coverings, with the one or two exceptions indicated above, all recovered, and that under the most diverse methods of wound treatment. The amount of shock from the accident was but slight in some cases.

M. A. F——, fifty-six, a charwoman, was admitted to the infirmary soon after midnight on Oct. 9th, giving the following history. The patient has been the subject of a large left femoral hernia for about thirty years. It came on gradually, and she has been in the habit of wearing a truss during the greater part of this time. It became strangulated, and was operated on in January, 1886, at St. Thomas's Hospital, where she remained under treatment for about three months; she has worn a truss habitually since the operation; but had left it off for two days prior to her admission here. On Oct. 8th she returned to her home in Newington from her work in Blackfriars, and a few minutes after being in bed had a violent fit of coughing. She placed her hand on her groin and felt something slimy, which seemed to come out more and more. She dressed herself, tied a towel round herself, and walked to the infirmary in about five or six minutes; she had been subject to a winter cough for the past two years. The patient was found on examination to be feeling very sick, to be pale, with a weak, fluttering pulse, a peculiar drawn expression of face, cold clammy sweat about the face, and a loop of intestine sixteen inches long was protruding through the old cicatrix, resting half-way down the left thigh. The patient's skin was covered with fleabites, she was very dirty, and the intestine and mesentery had about on them little particles of fluff from contact with the clothing. The mass protruded was of a rose colour, and appeared quite healthy. An incision about two inches long was made outwards in the skin, but the obstruction to the return appeared to be at Gimbernat's ligament, on dividing which the protrusion was returned. After removing the more visible particles of extraneous matter by careful washing with iodine water, a firm pad was applied and fifteen minims of morphia solution given. No sutures were used.

Oct. 9th.—10 A.M.: A compound opium and soap pill was given every four hours; somewhat restless; pad reapplied because intestine showed tendency to protrude. Temperature 101°.

10th.—The morning temperature was 101°; the evening temperature 102°. She feels comfortable; no pain; no albuminuria.

11th.—No pain; comfortable.

12th.—Wound washed with iodine water; appears healthy; no pain.

19th.—Acute bronchitis. Two tablespoonfuls of ammonia and senega mixture were given every four hours.

22nd.—A mixture containing compound tincture of camphor, spirit of chloroform, syrup of poppies, and camphor water was given every four hours.

Nov. 1st.—Wound quite healed; no abdominal pains. Iodine water has been used throughout.

[2] Ibid., p. 754.
[3] Ibid., vol. ii. 1884, p. 276. Mirror of Hospital Practice.
[4] Ibid., 1826.
[5] Proceedings of the Pathological Society, Dublin, vol. i. 1849, p. 199.
[6] Journal de Méd. Chirurgie, Pharm., &c. Paris, 1765, xxiii., p. 557

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Compression Myelitis with and without Secondary Degeneration. — Cancer of Omentum. — Popliteal Aneurysm with Sarcoma. — Embolic Aneurysm of Gluteal Artery. — Periostitis and Atrophy of Ancient Egyptian Bones.

AN ordinary meeting of this Society was held on Feb. 18th, the President, Dr. Dickinson, in the chair.

Dr. COLMAN showed specimens from a case of Compression Myelitis with ascending and descending degenerations, taken from a case of spinal caries in a man sixty-four years of age. He had suffered from persistent pain in the back for eighteen months, and twelve months before death he suddenly became completely paraplegic, with absolute loss of sensation below the umbilicus, and loss of control over the sphincters. His knee-jerks were exaggerated, and there was ankle clonus. Two months before death he was operated on, and nine days later sensation began to return, but he died of exhaustion. Post mortem the cord was found to be compressed by a mass of granulation tissue. The bodies of the eighth and ninth dorsal vertebræ were completely excavated, and there was a large chronic abscess anteriorly. Sections showed intense myelitis at the level of compression. The disorganisation was not complete, as on longitudinal section axis cylinders could be traced in it. There were well-marked descending degenerations in both direct and crossed pyramidal tracts, and ascending degenerations in the postero-median and adjacent part of the postero-external columns in the direct cerebellar tract, and in the ascending antero-lateral tract of Gowers. There was also well-marked neuritis of the roots at the point of compression, which extended down into the nerve trunks. Dr. Colman also showed specimens from a second case of compression myelitis in which there were no secondary degenerations. The patient was a man aged forty-four, who had suffered from symptoms of gradual compression for twelve months. At the time of death he had almost complete paraplegia, with great blunting of sensation. There was loss of sexual power and tendency to retention, exaggeration of knee-jerks, and ankle clonus. Post mortem the cord was found to be compressed by the sac of an abscess connected with the ninth and tenth dorsal vertebræ. On section the cord was found to be dull red and opaque at this level. Microscopically there was well-marked transverse myelitis, the grey matter being less affected than the white. Sections taken an inch above and below the lesion did not

show any ascending or descending degeneration whatever.—Dr. ORMEROD asked why one cord should degenerate with a transverse lesion and another not. He imagined that recovery could not take place if secondary degeneration were complete. He passed round some microscopical sections from a case of Pott's disease with ascending degeneration.—Dr. HADDEN had made a necropsy on a case of complete paraplegia from Pott's disease of seven years' standing. The man had almost recovered from his paraplegia, and had considerable power over his legs, and yet the cord showed marked lateral sclerosis. He asked if Dr. Colman had observed any healthy fibres in the descending pyramidal tract which might belong to the direct cerebellar tract.—Mr. SPENCER looked upon the case related as valuable in serving to localise centres in the spinal cord, for in this case the nervi erigentes were paralysed, whereas the sphincters were not; while Mr. Hutchinson had placed on record an instance where exactly the opposite condition existed.—Dr. DICKINSON said that degeneration of the cord might not only follow disease of the cord itself, but might also happen after amputation of a limb.—Dr. COLMAN, in reply, said he found about one fibre in twenty healthy in the descending pyramidal tract.

Dr. S. WEST described a case of large Cancerous Tumours of the Omentum, weighing nearly 21b., with miliary cancer of the peritoneum and mesentery. The patient, a woman aged fifty-two, was admitted into St. Bartholomew's Hospital with abdominal distension and a little ascites. She had been out of health for two years, and for nine months had noticed that her abdomen was getting larger. Five months before admission she was seized with severe pain, and was laid up for two months with what was called cystitis. She gradually lost strength, and was then admitted. A swollen abdomen was found with displacement upwards of the heart and lungs, causing dyspnœa; there was also swelling of the legs. She was tapped, and twelve pints and a half of blood-stained serum removed. A tumour was then felt in the left quadrant of the abdomen, which was smooth and hard, and a finger could be passed beneath its edge. Later right hydrothorax developed and sixty-three ounces of fluid were removed, but the patient sank and died suddenly. At the necropsy the intestines were matter together, and a large mass of omentum was found rolled up like a pancake, and many small miliary deposits existed all over the peritoneum, resembling the whitish-yellow thickenings often found on the capsule of the spleen. Microscopically the masses proved to be scirrhous cancer. No primary growth could be discovered, and he was inclined to look upon the case as one of primary cancer of the omentum.—Mr. EVE said that Dr. West's case closely resembled tubercle of the omentum. He had met with two or three cases of myxo-sarcoma with localised areas of mucoid degeneration. In the absence of primary growth elsewhere, and, if not myxo-sarcomatous, the case was probably one of endothelial cancer.—Dr. DICKINSON was much interested as to the source of this growth. He referred to a case of abdominal cancer which gave rise to much diversity of opinion as to diagnosis. In that case the omentum was found rolled up like a pancake, and was probably an instance of primary omental cancer. The specimen was referred to the Morbid Growths Committee.

Mr. CROFT then brought forward a case of Aneurysm of the Popliteal Artery associated with Sarcoma. The specimen included a large aneurysmal clot lying in a mass of sarcoma tissue, and was obtained from a male aged seventy-one, who was the subject of aortic valvular disease. He had been seized, three months prior to his admission under Mr. Croft's care in St. Thomas's Hospital, with pain and swelling behind the knee and in the leg. The œdema subsided in two months, and then the medical attendant discovered a small, strongly pulsating tumour in the popliteal space. A fortnight later he entered St. Thomas's Hospital, and was found to have a strongly pulsating swelling, fusiform in shape, about the size of an egg, and this swelling was diagnosed as a popliteal aneurysm. He was seen by several members of the surgical staff, and no one doubted the correctness of the diagnosis. The artery was ligatured on the twelfth day with an antiseptic silk ligature, tied after Messrs. Ballance and Edmund's plan. This was not effectual. Pulsation returned, and the tumour increased. Three weeks later the femoral artery was ligatured above and below the seat of the first ligation. Pulsation ceased in the tumour, and never recurred. The swelling diminished and consolidated. Five weeks after the second operation the tumour began to increase in size on its outer aspect, and soon became larger than ever. No pulsation recurred. A fortnight later fluctuation was indistinctly felt. Three months after the operation the local signs pointed to either disintegration and liquefaction in the aneurysm or to the presence of a new growth. An exploratory incision was made and new growth discovered. The limb was therefore amputated. Rapid recovery ensued, and the patient left the hospital at the end of the month. He died twelve months later of recurrence and extension of the sarcoma. The preparation which had been made of the diseased parts showed that (1) the core of the mass in the popliteal space was formed by an egg-shaped lump of firm laminated pink clot, which was encapsuled by a thick pale lamina; (2) that except at its upper end there was no distinguishable sac wall to this concrete laminated clot; (3) that the compressed popliteal artery was seen above to expand on to the upper end of the concrete clot, and after being traceable for about three-quarters of an inch the walls of the artery were lost; (4) that the same artery was seen at the lower end of the clot to recommence as it were in a dilated condition, and to gradually regain in a tortuous course of about two inches its natural calibre; (5) that this clot was traversed or tunneled by a well-marked though winding channel by which a current of blood passed from the femoral artery to the limb below; (6) that the large growth was formed by a round-celled sarcoma, which had not sprung from bone or periosteum, that it surrounded and compressed the artery above the clot or aneurysm, but about the body of the latter was decidedly differentiated from it, and in its lower part had liquefied and disintegrated; (7) that the sarcoma had followed the course of, invaded and blocked, the large veins, particularly the popliteal and femoral veins. Mr. Croft made the following inferences:—(1) That the original lesion was a vascular one; (2) that the vascular lesion was aneurysmal; (3) that the aneurysm was sacculated, and up to the time or stage before invasion by the malignant new growth possessed and retained its sac; (4) that the clinical history before and after the first ligature supported this by (*a*) the strong expansile pulsation, (*b*) the collapse of the swelling when the flow of blood into it had been arrested, (*c*) the definition of the early swelling, and (*d*) the sudden onset of the local disorder, suggesting an embolic origin; (5) that about the time of and after the second and successful ligation the sarcoma penetrated and destroyed the sac; (6) that some of the outlying soft coagulum disintegrated, mixed with the surrounding sarcoma, and they together formed the fluctuating portion of the swelling on the outer side of the ham; (7) that owing to the density of the cortical laminæ of the clot no extravasation of blood took place, and therefore no pulsation recurred; (8) that the case was one of aneurysm, which became complicated about the time of the successful ligation by a rapid growth of round-celled sarcoma.—Mr. J. HUTCHINSON, jun., saw two views which might be taken concerning the case: it might be regarded either as a sarcoma set up by the irritation of the aneurysm, or it might have been really a case of sarcoma from the first; in favour of the latter view was the fact that the growth entirely surrounded the aneurysm. If the case arose in the second way, it seemed to be on a par with the instances of acute traumatic malignancy which had been described.—Mr. MASON said that about a fortnight ago Mr. Walters of Reading met with a case in which a lad received an injury to the right popliteal space. A soft fluctuating swelling formed, which was diagnosed as a tumour. It was removed, and found to be a round-celled sarcoma.—The PRESIDENT asked the author to detail more accurately the pathological connexion between the aneurysm and the sarcoma.—Mr. CROFT said, in reply, that he was willing that the specimen should be referred to the Morbid Growths Committee. All the points in the case appeared to him to be in favour of the view that the aneurysm preceded the sarcoma, the early symptoms especially being typical of aneurysm without growth; it collapsed completely, for instance, on proximal compression of the artery. When he said that the ligature had failed, he meant that the knot he tied had yielded.

Mr. EDGAR WILLETT related a case of Embolic Aneurysm of the Gluteal Artery in a patient the subject of ulcerative endocarditis. The patient, a woman aged twenty-five, was admitted into St. Bartholomew's Hospital on May 11th, 1889, under Sir W. Savory. Thirteen years ago she had scarlet fever, and nine years ago "low" fever (? rheumatism),

for the last five years there had been dyspnœa on exertion, for two years the legs had been swollen, for four months there was pain in the right hip, and two months ago a blister was applied for sixteen hours, and afterwards pulsation was noticed. On admission there was a large pulsating tumour presenting the usual signs, measuring four inches in all directions; the pulsation was controlled by proximal pressure; there was an aortic murmur, and albumen was present in the urine. A tourniquet was applied and ice was kept on and off for from six to eight hours; the temperature was always hectic. During treatment for three months in hospital three attacks of pain occurred on the left side, the spleen was enlarged and tender, subsiding with pain, and death occurred on August 8th. At the necropsy the heart was found to weigh sixteen ounces, the pericardium contained bloody fluid, and the aortic valves were much diseased. The spleen and kidneys were infarcted. An aneurysm was found beneath the gluteus maximus muscle, it contained no laminated clot; no embolus was found, and the rest of the artery was obliterated. The interesting points were: (1) the rarity of the situation—Mr. Holmes in his lectures at the College of Surgeons in 1874 being able to refer to only thirty-three cases—they were often thought to be sciatic, and their true nature was only proved by dissection; (2) as to causation, Goodhart's theory of septic embolus was probably correct, and this was important to recognise for treatment, because the rest of the artery remained healthy if the patient be well enough for operation.

Mr. EVE showed specimens of ancient Egyptian Bones with Osteo-arthritis and Periostitis and some Skulls showing Senile Atrophy. They had been brought from the village of Gurob, and had been presented to the museum of the College of Surgeons by Mr. Flinders Petrie through Mr. Spurrell. The bones dated from the time of the Ptolemaic dynasty, 1300 B.C. Two tibiæ showed on their outer surface a periosteal deposit like a frosting of the bone, and this deposit was continued round the lower third of the shaft; there was some lipping of the extremities, showing the presence of osteo-arthritis. Two femora were exhibited, which corresponded with the tibiæ, and on the outer surface of the lower third of each there was a periosteal deposit; the articular ends also showed unmistakable signs of osteo-arthritis. Other bones showed the articular change alone. The association of the osteo-arthritic and periostitic lesions suggested a similar origin for both, and he exhibited a specimen somewhat like it from the museum of the College of Surgeons. Mr. Holmes had stated that he had not seen an unequivocal case of rheumatic periostitis, and the existence of it even had been regarded with scepticism. The period at which these patients lived was one of high civilisation, and the diet was mostly starchy, though nothing was known concerning their beverages. It was strange that osteo-arthritis should be so common in such a dry climate. He likewise exhibited two skulls, one with a remarkable symmetrical atrophy occupying a point near the parietal eminences. The external table and diploe had disappeared, and only a thin lamina remained, dotted over with minute apertures of bloodvessels. The specimen evidently came from an old person, for the bones were lighter than they should be, the jaw was edentulous, there was undue prominence of the temporal ridge, and the sagittal suture was obliterated. He showed a skull from the College museum of a Wallachian gipsy aged eighty-two. It was edentulous and showed two spots of atrophy not quite so well defined, situated at the position of what would correspond to the parietal fissure. In another old skull from the collection the same points were noted. On close examination there was seen to be not only atrophy but a distinct bending inwards of the bone; the condition corresponded probably to the senile atrophy of other bones in old people. Yet another skull was exhibited which seemed to show the atrophy in an earlier stage. The condition had been described by Professor Humphry from six skulls, one of which was at Cambridge, four in the Dupuytren Museum, and one at Berlin. The exact symmetry of the wasting, and the absence of the signs of disease, made him think that it was a congenital deformity. In *Virchow's Archiv* for 1854 was an account of two skulls similarly affected, and two others had recently been described in Paris. He himself regarded the change as an involution process accompanying old age, beginning by osteoporosis, the site being determined by the fact that the posterior superior angle of the parietal bone was the last part of the bone to ossify, and was the worst nourished. It was at this spot that congenital parietal fissures occurred, and Broca had described two skulls with foramina in this region. An area showing such tendency to nutrition defect was a most likely one in which atrophy would commence.—Mr. SPENCER asked if osteo-arthritis were regarded by the author as a form of rheumatism. The Egyptians had their legs exposed and were liable to chronic ulcerations, so that the periostitis might be induced by a lesion of the soft parts over the bone.—Mr. SHATTOCK said that Mr. Adams had never seen periosteal formation accompanying rheumatoid arthritis, and most agreed that the latter disease was not due to rheumatism. It should be remembered that because the skulls were old in which the atrophy was found it did not necessarily follow that it was a senile change.—Mr. HUTCHINSON, jun., thought that if the atrophy were due to congenital malnutrition it should reach to the middle line.—Mr. EVE, in reply, said he looked upon it as an osteo-arthritic periostitis having no connexion with acute articular rheumatism. Ossification of the parietal bone commenced at the eminences, and tooth-like processes radiated from this; these processes were widest and thinnest at the posterior superior angle. Ossification also commenced at and followed along the margins or the bone, and thus an island was left which corresponded to the patch of atrophy. He thought the decided evidence of change round the vessels in some of the cases excluded the theory of their congenital origin.

The following card specimens were shown:—

Dr. MACKENZIE: Meckel's Diverticulum, producing Strangulation.

Dr. DALTON: Œsophagus and Stomach from a case of Carbolic Acid Poisoning.

CLINICAL SOCIETY OF LONDON.

Exhibition of Living Specimens.—Thrombosis of Cerebral Sinuses and Veins.—Trephining for Old Hemiplegia.—Biliary Fistulæ.

AN ordinary meeting of this Society was held on Feb. 14th, the President, Mr. Christopher Heath, in the chair. Before the commencement of the regular proceedings the President called the attention of members to the loss which the Society and the profession had sustained in the person of one of their past Presidents, Sir William Gull. Mr. Heath passed in review some of the more valuable of the contributions of the deceased to medical science, referring in particular to his work on the "Cretinoid Condition occurring in the Adult," afterwards more fully worked out by Dr. Ord under the name of "Myxœdema." He also dwelt on the work done by Sir William Gull on Apepsia Nervosa, both of which researches had yielded valuable fruit.

The following living specimens were first demonstrated:—

Dr. ORD showed two cases, the first being one of Sporadic Cretinism, and the second a case of Early Myxœdema in a young woman.

Dr. KENNETH CAMPBELL exhibited a case of Acromegaly.

Dr. SILCOCK brought forward two cases of Hyperostosis of the Frontal Bone and Orbital Walls, one being associated with epilepsy and both treated by trephining.

The PRESIDENT exhibited a patient with Recurrent Sarcoma after excision of the scapula and upper arm.

Mr. WAINEWRIGHT showed two cases, one being a successful result of Excision of the Ankle-joint, and the other a case of Erasion of the Knee-joint, followed by a movable articulation.

Mr. ROBINSON brought forward an instance of Gummata in the Sterno-mastoid Muscle.

Dr. SEYMOUR TAYLOR exhibited a patient with Biliary Fistulæ, whose case was detailed later in the evening.

Sir DYCE DUCKWORTH read notes of two cases of Thrombosis of the Cerebral Sinuses and Veins. The first case occurred in a girl aged thirteen, who was admitted to St. Bartholomew's Hospital suffering from advanced heart disease of rheumatic origin. She had been laid up at intervals on account of this for three years. Five weeks before admission she had an attack of measles. The physical signs indicated disease of the mitral valve entailing both obstruction and reflux, with general dilatation of the heart. There was much dropsy. Phosphoric acid and digitalis were prescribed and a "dry diet." Two days after admission hæmoptysis occurred. Venesection to four ounces was practised from the right arm. There was no pyrexia, the temperature being subnormal. Quinine and strophanthus were given, also citrate of caffeine. Vomiting came on,

and was treated with effervescing sodium draughts. A few days later headache was complained of, followed by an acute shaking in the left hand. Vomiting occurring, the shaking ceased. An hour and a half later a fresh attack of jactitation of the left hand occurred, lasting ten minutes, accompanied by screaming, and the movements grew violent in the arm. The face was also twitched on the left side, and strabismus (internal) occurred in the left eye. There was pain in the left arm, the legs were unaffected. The movements stopped suddenly, but the arm was found to be powerless and anæsthetic. Another attack of similar nature followed in four hours, the left hand being held rigidly in claw-like position. Collapse and death ensued in five hours. At the necropsy the heart was found dilated and hypertrophied, weighing 13 oz.; the mitral valve was thickened. The lungs were collapsed, and there was fluid in each pleura. The liver was enlarged and "nutmeggy." The right lateral, superior petrosal, and superior longitudinal sinuses were distended with clots, which were adherent in places and decolourised. The cerebral veins were all engorged, especially one passing just posterior to the right ascending parietal convolution. The next case, which was connected with the puerperal condition, occurred in a woman aged twenty-four, who was admitted under the care of Dr. Matthews Duncan on Oct. 31st, 1889. She had been married seven years, and had five children, the last, born at full time, three weeks previously. She had phlegmasia in both legs after her first confinement, the right leg having remained swollen and clumsy ever since. On getting up on the sixteenth day, a week before admission, both legs began to swell, and had been enlarging since, the left limb being rather less affected. A trace of albumen was found in the urine. The heart sounds were clear. The legs were wrapped in cotton-wool and bandaged tightly. Some general improvement followed during the next twelve days, the temperature being subnormal. On Nov. 12th she vomited her dinner, and complained of frontal headache and aching of the eyes. This continued for three days, when drowsiness set in, the limbs were found to be limp, and she became subsequently semi-comatose. There was no squint, but oscillations of the eyeballs were noticed. No optic neuritis was detected, only slight blurring of the upper part of the right disc. Twitchings of the hands and fingers came on, especially in the left. She was ordered brandy and nutrient enemata, and a blister to the nape of the neck. The twitchings of the fingers and clenchings of the hand increased, the face being drawn to the left side. "Cheyne-Stokes" type of respiration ensued, with rigidity of the neck and arms, and sweating. The temperature began to rise steadily, and reached 106° before death, on Nov. 16th. At the necropsy thrombosis of the cerebral veins and of the straight and lateral sinuses was found. There was extreme congestion of both optic thalami, with hæmorrhagic softening of the posterior part of the right optic thalamus. The veins of both lower extremities were blocked, also the inferior vena cava and right renal vein. Some remains of the placenta were found in the uterus. References to other cases were made, and the rarity of this condition as a concomitant of heart disease was pointed out. After reviewing the several points in each case, the author summarised the condition betokening the presence of thrombosis in the cerebral sinuses and veins as follows: (1) headache, at times very severe, and sometimes plainly localised; (2) vomiting, generally severe; (3) motor symptoms, indicative generally of irritation, either cortical or central—hence, tremors, jerking, spasms, and contractions in other parts, usually of one side, ending in paresis or paralysis; (4) drowsiness, delirium, coma; (5) variations in the size of the pupils. For treatment, the employment of alcohol, ammonia, and sodium salts was urged, with a good proportion of vegetable diet. Quinine, with ammonia, was recommended at the outset of any symptoms indicating encephalic thrombosis.—Dr. HADDEN asked if in either of the cases disease of the middle ear had been observed. The second case seemed to be one of blood dyscrasia with a general tendency to thrombosis.—Mr. GODLEE said that in cases of heart disease cerebral thrombosis was rare. The condition occurred most frequently in association with middle-ear disease, and after that was oftenest observed in connexion with marasmus, especially that brought on by cancerous disease. It was occasionally seen also in the course of anæmia and Bright's disease.—Dr. BARLOW, remarking on the difficulty of diagnosing these cases, said he had seen many instances in marasmic children, though he had never correctly understood their nature during life. He had often heard these patients emit piercing screams like the "hydrocephalic cry." In a majority of the cases many small hæmorrhages were associated with the thrombosis. As a rule, the clotting extended to both sides, though it might be more marked on one only.—Sir D. DUCKWORTH replied that the first case presented no ear symptoms, and the necropsy revealed healthy cranial bones. In that case, though there were no punctiform hæmorrhages, screaming was a marked feature during the attacks of spasm.

Dr. HALE WHITE and Mr. ARBUTHNOT LANE contributed a case of Trephining for old Hemiplegia accompanied by severe headache. The patient, a man aged twenty-nine, was admitted into Guy's Hospital in September, 1888. Fourteen years previously he had twice fallen on his head. After each fall he was insensible, and he was admitted into the hospital after the second fall for left hemiplegia and violent pains in the head. He stayed in eight weeks, but had no fits during his stay, and he went out in the same condition as on admission. After he left the hospital he had frequent fits, which, according to his mother, were chiefly on the left side of the body, but somewhat on the right. The last fit was about March, 1887. During the whole of the fourteen years he had suffered from severe headaches. On his admission, in September, 1888, his general health seemed good; examination of his skull did not reveal any trace of his former injuries. He had left hemiplegia. The left arm was flexed and pronated; the muscles were wasted. The leg was affected to a less degree. The left side of the face was slightly contracted. The only other important symptom was the severe headache, which the patient said made his life unendurable, and he was willing to have anything done which would give him any chance of getting rid of it. It was thought probable that the falls on the head had caused in some way partial destruction of the cortical motor area on the right side, and it seemed extremely probable that there was still some chronic inflammatory thickening of the parts in the neighbourhood, because for thirteen years the patient had suffered from epileptiform seizures, and had always complained of severe headache. Accordingly Mr. Lane trephined over the middle of the fissure of Rolando on the right side. The bone in this region was three-quarters of an inch thick. This thick bone was present over the whole of the fissure of Rolando; it gradually shelved into normal bone on either side. The dura mater was thickened, and the ascending frontal and ascending parietal convolutions were much wasted. The thickened bone and dura mater were removed. The wound healed perfectly, and, except for two attacks consisting of a fit and some headache, the patient did uninterruptedly well. These two attacks were probably due to some inflammatory exudation following the operation. Otherwise the patient had had absolutely no headache since the operation, which took place seventeen months ago. He had also gained considerable power in his walking, but his hand remained in the same condition. He was delighted with the result, and said that, were he in the same condition as he was fourteen months ago, he would gladly go through the operation again, for now he never had any headache, and previously it was so severe and constant that it made his life not worth having. He was also much pleased with the gain of power in the leg.—The PRESIDENT was glad that an interval of seventeen months had been allowed to elapse between the operation and the publication of the case, as it permitted a sounder opinion to be formed as to the permanence of the results.—Mr. MARSH inquired how much bone had been removed in the operation, and how many pieces had been replaced.—Dr. WHITE replied that he believed some half-dozen pieces had been replaced. Trephine holes were made in two places, and the intervening bone was chipped away. The whole of the bone covering the ascending frontal convolution was removed, except a portion at the lower part.—Mr. MARSH considered a circular saw preferable to bone forceps for removing the bone between trephine holes.—Mr. BARKER said that it was not wise in all cases to fill in the cavity with pieces of bone, for in some cases the closure of the hole by membrane might be an advantage. He inquired how much dura mater was removed. Inquiry was also made as to whether the latter membrane was sutured.—Dr. WHITE agreed that ossification was not the best thing to induce in all cases. The dura mater had been removed to the extent of an inch in width

over all the area from which bone was taken. It was notably thickened, but not to the same extent as the bone. No sutures were inserted in it.

Notes were then read of a case by Dr. SEYMOUR TAYLOR of Biliary Fistulæ with escape of Biliary Calculi. The patient, a man aged fifty-seven, a plasterer, came under his care as an out-patient last autumn, suffering from eczema. He had, in addition, four sinuses in the abdominal wall. He suffered from English cholera followed by jaundice twenty-two years ago, the character of the evacuations not being then observed. Then came a history of paroxysmal pains in the right hypochondrium eight years ago, and subsequently redness, tenderness, and, finally, a "gathering" formed over the liver region. The "gathering" went on for eighteen months, during which time he was admitted into the London Temperance Hospital, and five days after his admission the abscess burst near the umbilicus, discharging yellow pus. Two weeks later a gall-stone escaped by the sinus. Then other sinuses formed in the right side of the abdominal wall, from which numerous gall-stones—at least twenty—had escaped during the last ten years, at varying intervals of time. The largest calculus appeared from the sinus near the umbilicus and was the tenth in sequence. The last one to be discharged was in August, 1889. No previous tumour or enlargement of the liver had been observed prior to his acute illness. At the present time there were four sinuses in the abdominal wall, all discharging clear, bile-stained serum, and at times a calculus. The largest sinus was a little above and to the right of the umbilicus; the other three were in the neighbourhood of the right inguinal canal. The motions were of good colour. The bowels were slightly constipated, and required the help of aperient medicine. His urine was not bile-stained, and contained neither albumen nor sugar. He had no vomiting. Occasional rigors occurred, probably as the result of a travelling gall-stone. Many cases of gall-stones escaping by biliary fistulæ had been recorded. Murchison gave references to eighty-six. The present case was interesting inasmuch as it occurred in a male. The tracts which the fistulæ had taken were probably those which led to some of the weaker parts of the abdominal wall; the largest sinus possibly being directed towards the umbilicus by the round ligament of the liver, the others tending towards the inguinal canal. The escape of a calculus always gave rise to severe paroxysmal pain and rigors. The glairy discharge now oozing from the sinuses probably consisted of mucus from the gall-bladder, together with a little bile. Nevertheless, it was inferred that bile also passed into the duodenum, since he was well nourished, enjoyed fairly good health, and had lived nearly seven years since the first sinus formed. It was proposed to leave things alone, as he was inclined to think that any probing of, or surgical interference with, the fistulæ would be attended by danger of the escape of bile into the peritoneal cavity, with subsequent fatal peritonitis.

Before the close of the meeting, Dr. GLOVER called attention to the inconvenience arising from patients being present during the discussion of their cases, and the PRESIDENT was able to assure members that this would be quite obviated when they removed to their larger rooms.—The SECRETARY asked members to give him early notice of any cases they might intend to exhibit.

MEDICAL SOCIETY OF LONDON.

Discussion on Epidemic Influenza.

AN ordinary meeting of this Society was held on Feb. 17th, the President, Dr. Theodore Williams, in the chair.

A discussion on Epidemic Influenza was opened by a paper by Dr. GILBART-SMITH. Having described the characteristics of the disease, he gave the course of the present epidemic, together with its symptoms and varieties. He classified the disease according as it affected the nervous system, the pulmonary or abdominal organs; and in respect to treatment recommended the salicylate of soda, salicine, bromide of ammonia, and in the later stages quinine. He deprecated the use of antipyrin. Generous diet was recommended, and careful administration of alcohol was insisted upon. The view was held that influenza was a disease affecting primarily the nerve centres, and that the bronchitis, broncho-pneumonia, pleurisy, and abdominal symptoms, meningitis, otitis, &c., resulted from inflammation set up by an irritation due to the action of the special virus. The author held that the disease was of an acute infectious type, arising from some unknown cause apart from recognised telluric or atmospheric conditions. He considered that its dissemination was furthered by elements of a contagious nature. He believed the period of incubation to be short—it might be of a few hours only, but was generally from one to two days. An epitome of the bacteriology of the question so far as it was known was given. In conclusion, Dr. Gilbart-Smith placed the following questions before the Society for its consideration:—1. Was the present disease true epidemic influenza? 2. Was epidemic influenza spread by means of a specific microbe or by a miasm, or was it caused *de novo* by some atmospheric or telluric condition, of which as yet we were in complete ignorance? 3. Might the morbific agent, howsoever originally produced, be further developed in the human body and become the source of increased distribution of the disease; in other words, was the disease contagious? Was it bacterial in kind? 4 What was the length of the period of incubation? 5. Were the neuro-muscular symptoms, so generally observed, due to the fact that influenza was an acute specific fever primarily affecting the nerve centres? 6. Did this outbreak present any marked deviation from previous epidemics? 7. When did the epidemic make its first appearance in the metropolis? What was the percentage of the population attacked, and the mortality involved? 8. Did epidemic influenza as it appeared in the lower animals bear any causal relationship to the disease in man?

Dr. SYMES THOMPSON thought that there was distinct evidence to prove that the disease was dependent on something far more diffusible than contagion, as we now understood the term—something more occult. Contagion, however, could not be altogether set aside, owing to the frequency of the spread of the disease by contact. The question of the length of the period of incubation had also to be considered in connexion with this subject. He questioned whether the disease were entirely distinct from the sporadic form of catarrhal influenza, and asked if the local epidemic form of the malady might not be the true form of the disease, lacking the character of generalisation. Even the case of the malady breaking out in mid-ocean might be explained on this hypothesis, it being only the intensification of a slight and latent malady hitherto present but unnoticed. He propounded three questions for discussion. Had the ordinary catarrh any relation to this epidemic or not? Was there not continually present amongst us a something which might become intensified and break out into an epidemic? Did the malady which occurred among the lower animals bear any true relation to influenza? In former epidemics a catarrhal disease among animals had been noticed previously to a general outbreak, and in some instances also the vegetable kingdom had been attacked. In England in October of last year a catarrhal disease was present amongst horses. The time when the disease was most prevalent was easily estimated from the returns of the General Post Office. Twelve thousand people were employed, and the usual absentees from sickness were 250 per diem. The number on the sick list gradually increased to 1800 at the end of the first week in January, and after that gradually declined. On inquiry it was found that no greater sickness existed amongst those who dealt with letters and parcels from abroad.

Dr. BUCHANAN said that he could hardly conceive anything more *bizarre* than the study of influenza; he became bewildered with the varying aspects under which the disease presented itself. On inquiry at the Foreign Office, he had found that the officials there had suffered from the malady in rather less proportion than those in other offices. He was anxious to track the beginning of the disease in England, and he found it extremely difficult to say when the epidemicity commenced. There were a few instances in London in October, when there were many cases amongst horses, though he did not venture to say that the latter was the same disease which affected the human being. Cases also occurred in groups on the low hills about the Humber in October, but they were very trivial in character. This trivial character of the cases in October and their well-marked features in January should be connected with our ideas of the prevalence of the disease, for in the former month its mildness must have greatly hindered its recognition. It was possible that we might have derived a slight disease from somewhere which developed in amount and intensity as it went on, just as in a school trivial cases of sore-throat were sometimes observed before the outbreak of a genuine diphtheria.

Perhaps in its beginning it was simply the epidemic catarrh of England, that which foreigners recognised as a peculiar English complaint, the cases becoming towards the end more intense and fatal, as was the case often with other epidemics. The fact that what was called epidemic pneumonia was prevalent in various parts of England during last year ought to be remembered in connexion with epidemic influenza, especially as pneumonia had been a first manifestation of some cases of the latter disease. He was desirous of learning the incubation period of influenza; he had seen instances in which two days intervened between fresh attacks, and again a good number of others where as many as six days had interposed; perhaps unobserved cases had occurred which would supply the connecting links. Animals, and particularly children, might serve as the intermediate subjects. He thought that the relapses might be repetitions of the attack, and these second and third attacks sometimes took on a different type. He had noticed that after a primary attack with diarrhœa there was no recurrence.

Dr. NORMAN KERR said that this malady was common in the vicinity of the Danube. He had made notes of 700 cases which he had seen during the present epidemic; 400 of them were females and 300 males. The ages ranged from five months to eighty-six years. The heaviest weeks were the first and second in January. In three-fourths of the cases the temperature ranged between 101° and 103° F., and fell to normal in about three days. In 25 per cent. of the cases the temperature at the onset was between 104° and 105·4°; the pulse was usually 120 to 140; the tongue coated and tremulous; the incubation period was from six to eight days, the period of duration of the malady four to twelve days, and the period of convalescence from four to twenty-eight days. He would divide the cases he had seen into five groups: the general, the catarrhal, the gastro-intestinal, the nervous, and the arthritic. The principal complications occurred in patients between thirty and forty years of age, and he had seen bronchitis, pneumonia, rheumatic pains, and chorea. For treatment he had found antipyrin and antifebrin useless. He had been called to people who had treated themselves, and had found them giddy and deaf and intoxicated with the quantity of salicine and quinine and alcohol with which they had been dosing themselves. The treatment he had found most successful was to put his patients to bed and let them sweat thoroughly. For this purpose he gave them a drachm of liquor ammoniæ acetatis, with two minims of ipecacuanha wine every hour. This was continued for about sixty hours, when the perspiration usually ceased. He found quinine and squill of use later on, and salicylate did good in certain suitable arthritic cases. He dissented to the employment of alcohol as a routine treatment; he had administered it in 1 per cent. of his cases. His mortality had been exactly 1 per cent. With regard to prophylaxis, he had used a spray of eucalyptus profusely. He looked upon the disease not as influenza at all, but as a great outbreak of malarial poisoning.

Dr. STEPHEN MACKENZIE objected to the title of Dr. Smith's paper, for he regarded the disease as being always epidemic, though he admitted that the arguments of Dr. Symes Thompson and Dr. Buchanan weakened his position; nevertheless Parkes had taught most stongly on the side he himself took, and had pointed out that since 1847 we had had no epidemic whatever of this disease. He did not himself believe that an ordinary catarrh was contagious. The definite mode of entrance, the way it became generalised, and the local effects produced made influenza resemble the class of communicable diseases. It was necessary to determine whether it had a definite mode of exit, and whether it was due to a cause distinctly specific or to a virus specialised but not specific. As an instance of the latter mode of causation he mentioned the well-known investigation of Dr. Thorne as to diphtheria in schools. Cases of sore-throat not communicable had been first observed, then cases of communicable sore-throat not diphtheritic, and then cases of true diphtheria. In the same way there might be cases of disease which could not be separated from ordinary catarrh, but which under special circumstances might become pandemic. The observation of early cases was always interesting. He thought the whole of the facts pointed to an organised poison—a microbe—as the causative factor; and he had seen a micro-organism which had been cultivated from the expectoration of six cases; this germ grew with such rapidity in fluid media that it exhausted the soil in about forty-eight hours. Injections into rabbits and guinea-pigs failed, and thus, though its mode of growth and rapidity of action were peculiar, the whole of the conditions required to establish the identity of the organism as causative were not fulfilled. A bacillus had been found in the blood which could not be cultivated. In calculating the period of incubation, the possibility of error was great; he thought the average period was three or four days. As to treatment, he thought that in the majority of cases diaphoretics were best; where arthritic complication existed, salicylate of soda was indicated. He had seen great depression of temperature follow antipyrin. He had the opportunity of studying an extensive outbreak in Dr. Barnardo's Home, and the majority of cases there were well in a week without any treatment whatsoever.

Dr. SAMUEL WEST thought the disease contagious in a kind of way: its family resemblances were clearly to the zymotic diseases. The incubation period, he thought, was about four days. Præcordial angina, which had been described in previous attacks, had been singularly rare; the pulse he had noticed to be very slow after the fever had passed. Relapses and second attacks had not been common; most of the relapses seemed to be cases of incomplete recovery, and were associated with the arthritic rather than the catarrhal group. Catarrh only seemed to be present in about two out of ten cases; it either occurred early or was a late sequel in neglected instances. A singularly fatal form of pneumonia had also been associated with the disease; it was more œdematous than consolidative, and affected both lobes. In many cases also hæmorrhage had taken place; among rarer sites he had seen purpuric extravasation into the skin, hæmoptysis, and metrorrhagia. In two cases he had seen the temperature nearly at 108° F., while in others the disease might run a totally afebrile course.

Dr. BEZLY THORNE looked upon it as a cerebro-spinal malady. In nearly every case he had found some portion of the spine tender three or four hours after the commencement of the attack, and it might persist as long as seven weeks afterwards. He had observed especially that tenderness was common over the fourth cervical vertebra, over the lumbar enlargement, and, most of all, over the cauda equina. He made it a rule to keep his patients in bed till the tenderness had disappeared. The incubation period, he thought, was from seven to ten days. Cases were easy to overlook; he himself was only attacked for six hours, and his temperature only went up to 99° F. As to periodicity, one lady he had seen suffered from præcordial angina at a particular time every week for several weeks afterwards, and in his own case he noticed that exactly a week after the onset he was seized with intense vertigo, and again exactly a week later his handwriting suddenly failed.

Dr. GILBART-SMITH, in reply, was inclined to think that the causative substance grew gradually from some morbific element. As to the period of incubation, two days after seeing a case he was struck down with it, and at intervals of two days each member of his family was affected, including the dog. The relapses, he thought, seemed to be fresh attacks.

HUNTERIAN SOCIETY.

Papilloma of Uvula.—Sarcoma of Foot.—Malformed Uterus.—Acute Necrosis of Atlas.—Pyæmic Abscess of Sternum.—Cancer of Sigmoid Flexure.

THE meeting on Dec. 11th, 1889, was a "pathological evening," R. Clement Lucas, B.S., F.R.C.S., president, in the chair.

Dr. WALTER FOWLER showed a Uvula entirely covered by a Papillomatous Growth removed from a young woman, and which had given rise to no symptoms. He remarked that, although papillomata were not uncommon as small growths situated on the top and sides of the uvula, the one he showed was sufficiently curious, as the whole of the uvula was replaced by a papillomatous growth.

Mr. RIVINGTON showed a specimen of Sarcoma of Foot. W. H. G——, aged sixteen, twelve weeks before admission into the London Hospital noticed a slight swelling above the third toe on the left foot. He first noticed it after running, but he had not sustained any kind of injury. When he came under observation a large globular swelling occupied the front of the foot, apparently situated both

above and below the metatarsal bones. The swelling on the dorsum was about the size of a large orange, firm and smooth. Syme's amputation was performed on Nov. 27th. The patient took the anæsthetic (ether) very badly. An antero-posterior section of the foot showed that the growth was mainly situated on the inferior aspect of the metatarsal bones, and sprang apparently from the periosteum of these bones, especially the second and third. It was firm and fibrous. Mr. Rivington also exhibited a specimen of Exostosis of the Left Tibia.

Mr. OPENSHAW showed two specimens of Malformed Uterus. There was a bifid condition of the uterus and a complete septum to the vagina. The rectum opened by an aperture in the posterior wall of the vagina; urine and fæces escaped by the cloaca. Two children had been born; pregnancy occurred in the right uterus.

Dr. DAVIES showed a Sarcoma of the Lung from a lad aged eighteen, and a Sarcoma of the Left Kidney, from a patient aged thirty-seven.

Mr. BIDWELL showed a specimen, from a child aged seven years, of Acute Necrosis of the Atlas, the posterior arch of which was entirely denuded of periosteum and lying at the bottom of an abscess cavity. Just above this bone was a perforation into the dura mater about the size of a goosequill. The child when admitted was suffering from pediculi capitis with an abscess in the nape of the neck. There were no signs of spinal disease. The abscess was opened and two ounces of healthy pus evacuated. The temperature remained high after two days; an abscess formed over the great trochanter. The child complained of headache, but was quite conscious. During the dressing a large amount of clear fluid was pumped out of the drainage-tube synchronously with the pulse, containing chlorides and albumen. The next day the child had a tonic convulsion of the trunk and limbs followed by unconsciousness. He became worse, and after suffering from frequent vomiting died eight days after the abscess was opened. He did not complain of pain in his head and neck till the day of his death. The necropsy revealed pyæmic abscesses in the lungs and pus in the spinal canal at the base of the brain and in the posterior horn of the left lateral ventricle.

Mr. BIDWELL also showed a specimen of Pyæmic Abscess of the Sternum, with a sac the size of a large walnut; the whole of the upper two-thirds of the gladiolus and lower part of the manubrium were absent. The cavity contained three small ossicles, the anterior ends of the upper five ribs on each side were free from their cartilages, which had disappeared. There were two openings into the sac, one above leading into the left sterno-clavicular joint, which was disorganised, the other opening into the anterior mediastinum. The abscess wall was thick and lined with granulations. The swelling did not pulsate, but could be partly reduced into the thoracic cavity. It was aspirated, and one ounce of foul pus evacuated. This was followed by urgent dyspnœa and a deep depression in the site of the sternum. Next day there was discharge from the puncture made by the aspirator. The child died four days later. At the necropsy the umbilical vein was found dilated and filled with pus; its prolongation into the left lobe of the liver was also full of pus, but this was shut off from the vena cava by a thin membrane. There was an isolated pyæmic abscess in the right lobe of the liver, but none in any other organ. Both pleuræ and pericardium were adherent to the abscess sac.

Mr. JOHN POLAND showed a specimen of Cancer of the Sigmoid Flexure removed after death from a man aged forty-six, who had suffered from chronic intestinal obstruction of nine months' duration. Three weeks before admission the symptoms became more acute, and obstruction to the passage of fæces almost complete. Obstruction at the hepatic flexure had been diagnosed at this time, and right lumbar colotomy recommended. Surgical operation was refused by the patient, with the result that he was admitted in a moribund condition with symptoms of acute peritonitis, and died within forty-eight hours. The post-mortem examination showed acute peritonitis, more intense in the right iliac region, where the intestines were matted together, and to the abdominal wall, bladder, and liver. There were several ulcers in the cæcum, two of large size, one of which had perforated the intestine. A few small ulcers were found in the transverse colon. The whole of the large intestine was enormously distended and hypertrophied. The cancerous growth, less than a quarter of an inch in thickness, was situated in the last turn of the sigmoid flexure, three inches and a quarter above the rectum, and not more than an inch in extent. The calibre of the gut was almost obliterated. Externally it appeared as though a string had been tightly drawn round the bowel.

At the meeting on Feb. 12th the following officers were elected:—President: Dr. Stephen Mackenzie. Vice-Presidents: Mr. G. B. Hicks, Mr. Alfred H. Smee, Dr. E. G. Gilbert, and Dr. Charlewood Turner. Treasurer: Mr. W. Rivington. Trustees: Dr. Fotherby and Mr. F. M. Corner. Librarian: Dr. Arthur T. Davies. Orator: Dr. Fletcher Beach. Secretaries: Mr. John Poland and Dr. Hingston Fox. Council: Sir A. Clark, Messrs. S. H. Appleford, T. Lloyd Brown, J. S. E. Cotman, T. Rowing Fendick, W. Fowler, G. H. Jackson, T. Mark Hovell, G. J. B. Stevens, R. G. Tatham, Percy Warner, and Dr. F. J. Smith.

CARDIFF MEDICAL SOCIETY.

THE monthly meeting of this Society was held on Feb. 6th, Dr. W. T. Edwards in the chair.

Hydatids of the Pelvis.—Dr. THOMAS WALLACE read notes of a case of this affection. The patient, a woman aged thirty-nine, had been married for eighteen years, and had never been pregnant. She had suffered for six years from a feeling of weakness and weight in the abdomen and general ill health, and had noticed for five years a lump in the right iliac region. Its growth had been gradual and unattended with pain, and menstruation had always been regular. The swelling was round, freely movable, and resonant on percussion. Bimanually it could be rolled about. Behind the uterus was another mass, apparently distinct from the first. The uterus was an inch and a half in length. The case was looked upon as an ovarian cyst. As the patient was very anxious to have something done, she was admitted into the Cardiff Infirmary under Dr. Wallace's care and subjected to operation. The omentum and intestines were found loosely adherent to the front of the tumour, while the mass itself was closely incorporated with the uterus and bladder below and to the right side. After separating the omental structures the upper part of the swelling was punctured, and this at once showed the cyst to be hydatid. After its complete removal, a pedicle having been formed out of part of the right broad ligament, a smaller cyst was discovered deep down in Douglas's pouch, containing whitish fluid with some calcareous matter like powdered egg-shell. These contents were carefully removed, the peritoneum cleansed, and the abdomen closed. The patient, however, died from septicæmia on the fourth day. The necropsy showed that the cysts had been completely removed, and suggested that a drainage-tube might have led to a more satisfactory result.

Reviews and Notices of Books.

The Geographical Distribution of some Tropical Diseases. By R. W. FELKIN, M.D., F.R.S.E., F.R.G.S. With Sixteen Maps. Edinburgh and London: Young J. Pentland. 1889.

No one can fail to peruse such works as that of Professor Hirsch upon Geographical and Historical Pathology without feeling the want of illustrative maps to bring out clearly the facts of the diffusion of disease over the surface of the globe. This want is in large measure supplied by Mr. Felkin, who has taken the work named as the basis of his essay, which was presented to the Royal Society of Edinburgh. The geographical distribution of the following diseases is depicted upon a series of maps of the world (Mercator's projection):—1. Malaria. 2. Dengue. 3. Asiatic Cholera. 4. Yellow Fever. 5. Oriental Sore or Boil. 6. Endemic Hæmaturia. 7. Beri-beri. 8. Oriental Plague. 9. Dysentery. 10. Lepresy. 11. Yaws. 12. Fungus Disease of India. 13. Elephantiasis Arabum. 14. Guinea Worm. 15. Filaria Sanguinis Hominis. 16. Scurvy. 17. Tropical Abscess of the Liver. The study of these charts conveys much information by itself, without reference to the text. Take, for instance, No. 2, where dengue is illus-

strated as being almost entirely confined, in the western as well as in the eastern hemisphere, to the Equator and 40° N. of it; or the instructive chart (No. 3) of Asiatic cholera, showing the entire immunity of Australia, the south and western part of South America, the greater part of Africa, and the great domains of Siberia and of British America. The littoral distribution of yellow fever (No. 4) is excellently brought out; the comparatively wide dissemination of tropical dysentery (No. 6) and of leprosy (No. 7), the latter highly suggestive of its more uniform diffusion in earlier historical periods, are facts which are taken in at a glance; as also is the vast area of Central Africa, in which scurvy is depicted as prevailing (No. 12). Besides these maps, the author adds one showing the isothermal lines, and the other the mean rainfall in different parts of the globe; and he points out that "all the diseases depicted, with the exception of scurvy, are endemic in various areas where the highest mean annual temperature is to be found, and ..... that they are most prevalent in regions having a rainfall of over fifty inches in the year." The study of these broader features of disease has special attractions, and might well be extended. The "tropical" diseases are peculiarly suitable for such treatment; it would be more difficult to apply it to such affections as typhoid fever or tuberculosis, so universal are they. But what is required is an institution of the comparative fatality of such affections in various parts of the world; and it is unfortunately very doubtful if the data exist for such a comparison.

Reynolds's Geological Atlas of Great Britain. Comprising a Series of Maps, geologically coloured, from the best authorities. Second Edition. 1889. London: James Reynolds and Sons.

FOR more than twenty years the first edition of this most useful and valuable work has been a faithful guide to those engaged throughout Great Britain in collecting facts with regard to the influence of geological structure on the overlying soil and local climates—a subject full of interest to the medical practitioner. It was to be expected that the publishers of such a work would find themselves called upon for a new edition in the course of time; this we are glad to say has taken place, and the call responded to in a manner that reflects the greatest credit on Messrs. Reynolds and Sons. The Atlas consists of thirty-three geological maps, well and carefully coloured in accordance with those published by the Geological Surveys of Great Britain. The first map is one of England and Wales, and the last one of Scotland, both geologically coloured. The thirty-one intermediate sheets (each measuring nine inches and three-quarters by seven inches and a quarter) are devoted to the counties of England and Wales; sixteen of the forty-four counties into which England and Wales are divided for registration purposes are represented separately; the remainder are divided into eleven groups; whilst Yorkshire and Wales occupy two sheets each on the same scale. The scales of these maps necessarily vary, but great care has evidently been taken in preserving uniformity in this respect as much as possible. The average scale for the grouped and single counties is at the rate of seven miles and a half to the inch, whilst Yorkshire and Wales necessitated a reduction to ten and a quarter and twelve miles to the inch respec tively. The grouping of the counties has been very judiciously arranged, and great care taken to avoid breaking the continuity of geological formations when shared by separate but contiguous counties, so that the grouping as arranged is a great advantage to the student. Each map contains an index to the Geological Survey sheets on the one-inch scale, quarter, and whole. Thus the work affords a complete index to the published survey maps. The excellent plan of filling up blank spaces with useful and interesting information, after the manner of G. B. Greenough, has been adopted in this Atlas. For instance, if we take the map of Kent (17) at Grays, Essex, the names of the fossils found there are inserted, and at Sheerness, on the opposite coast, as well. All around the coasts "raised beaches," "submerged forests," &c., are indicated, and all kinds of information relating to geology inserted. The railways and their stations are also shown.

The index of geological colours occupies a well-filled sheet. In the first place, there is the column of twenty-seven different colours and their shades indicating the sedimentary rocks, each colour and shade being distinctly numbered, so that even by artificial light each colour or shade is easily identified on the maps. The intrusive rocks are indicated by their initial letters. The second column contains the names of the twenty-seven different formations coloured; whilst in another column, opposite the list of formations, are the names "of the principal fossils in each stratum." For this part of the work, as well as for assistance and valuable suggestions throughout the preparation of this edition, the publishers express their thanks and acknowledgments to Professor Robert Etheridge, F.R.S., the eminent palæontologist. Besides the maps, there are forty-eight pages of letterpress, containing a large amount of condensed information (1) on "The Geological Structure of Great Britain," illustrated by fifteen sections and three views, the counties being geologically described in alphabetical order (pp. 1–24); (2) "The Mineral Products of Great Britain," each mineral being described in alphabetical order, and the places indicated where found (pp. 24–32); (3) "Agricultural Geology and Water-supply"—a succinct and well-written section, the formations and their soils discussed being arranged according to age, beginning with the recent alluvial deposits, and ending with the slate and plutonic rocks (pp. 33–37); and lastly, a useful "Tourists' Guide" to the principal places of interest, the finest views and scenery, and the fishing streams of each county in England and Wales, the counties being again taken in alphabetical order (pp. 38–48).

Such is an outline sketch of a Geological Atlas which we can with confidence recommend to our readers as a safe and interesting guide, whether they consult its contents as tourists, geologists, or students of medical geography. The work is remarkably well got up, and reflects great credit on all connected with its production.

OUR LIBRARY TABLE.

The Surgical Treatment of Intestinal Obstruction. By N. SENN, M.D., Ph.D., Attending Surgeon to the Milwaukee Hospital, Professor of the Principles of Surgery and Surgical Pathology in Rush Medical College, Chicago, Ill.—This is a paper read by Dr. Senn before the Congress of American Physicians and Surgeons, which met at Washington in September, 1888. It occupies nearly 170 large octavo pages, so that it is not a brief paper, but rather an elaborate essay. Dr. Senn is already well known for his very valuable original and bold experimental work in connexion with this subject, and in this essay frequent reference is made to "intestinal anastomosis" and "lateral implantation," and to the employment of perforated decalcified bone-plates, procedures that are associated with Dr. Senn's name. We need hardly state that the views advocated are those of the modern school, and that Dr. Senn has no confidence in "expectancy" in drugs or in Hutchinson's abdominal massage. Operation is almost the sole treatment advocated,

and great care is taken to point out the exact operative procedures best adapted to each variety of intestinal obstruction. Dr. Senn is well versed in the literature of his subject, and has devoted much thought to it. The result is an essay full of material for reflection and well worthy of the careful study of all surgeons who may be called upon to treat these very grave and anxious cases. Many of Dr. Senn's suggestions are very valuable, as is also the caution that no surgeon should operate in cases of obstruction unless quite familiar with conditions liable to be found, and with the *technique* of the several procedures that may be required.

Illustrations of Zoology: Invertebrates and Vertebrates. By WM. RAMSAY SMITH, B.Sc., and J. STEWART NORWELL. Edinburgh and London: Young J. Pentland. 1889.—In this work there are seventy plates representing on a tolerably large scale the morphology of a considerable number of animals. It might be used with advantage by a student in his first or second year, and would serve to familiarise him with the names, the forms, and to some extent with the structure of types of many of the orders and of all the classes of the animal kingdom. The authors desire that it may be regarded as a companion to a course of systematic zoology. As examples of the drawings, which are accompanied by brief explanations of the figures, we may take the plate devoted to Balanoglossus. There are here seven figures; one representing Balanoglossus minutus, a second the forepart of Balanoglossus sarniensis, a transverse section through the middle of the branchial region of Balanoglossus minutus, and four drawings of the successive stages of the development of the Tornaria larva in its passage into the adult Balanoglossus. The drawings are correct, though a little coarsely drawn, and might have been in some instances improved by the introduction of a little colour.

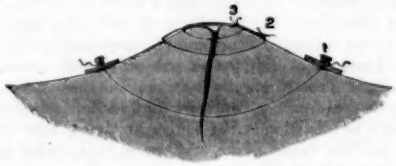
A German-English Dictionary of Medical Terms. By FREDERICK TREVES, F.R.C.S. Eng., and HUGO LANG, B.A. London: J. and A. Churchill. 1890.—The need of a reliable dictionary of technical terms has often been felt by the English student of German medical literature, and the publication of such a work some years since by Dr. Cutter went far to meet this want. The growth of science and the expansion of literature are, however, constantly adding to medical nomenclature, and, as Mr. Treves points out in the preface to the volume before us, have necessitated a thorough recompilation of terms. Certainly, he and his colleague have spared no pains to render their dictionary full and useful. We have endeavoured to detect errors of omission, but are bound to confess with but little success. Once or twice we fancied we had detected such, but found that we were dealing with compound words of which the components had their place in the pages of the dictionary. Indeed, it would have added unnecessarily to the bulk of the work to have included many such terms to the coining of which the German tongue offers such facilities. There are many terms, however, in common use which have to be included in such a work, on account of their frequent association with technical phrases, and we are glad to find the compilers admit this fully, and perhaps they might agree that such words as "beiträge," "thätigkeit," "verhutung," might have found a place, since they occur so frequently in medical writings. The word "Kot" seems less familiar to us than "Koth," but perhaps the elimination of the dumb aspirate may be justifiable. It is plain, however, that the lacunæ are insignificant, and the general merits of the Dictionary very high. Its value is indeed undeniable, and Mr. Treves and Mr. Lang are to be congratulated upon the care and accuracy with which they have performed a most useful task.

Latin Grammar of Pharmacy. By JOSEPH INCE, F.C.S., &c. London: Baillière, Tindall, and Cox. Fifth Edition, 1890.—This book, which is intended for the use of medical and pharmaceutical students, appears to meet a want, since it has reached a fifth edition. The addition of over a thousand words to the vocabulary indicates that the art of prescribing in Latin is not altogether defunct, and the use of accents will tend to remove much uncertainty. The book will doubtless continue to prove serviceable to those who desire to improve their acquaintance with the elementary technicalities involved in accurate writing and reading of prescriptions.

New Inventions.

AN IMPROVED FORM OF RELAXATION SUTURE.

DR. NEWTON ALFRED POWELL of Toronto, in a paper which he read before the Ontario Medical Society, gave a description of an improved form of relaxation suture, of which we give illustrations. The plates are made of pure block tin, cut to an oval form, measuring about three-quarters of an inch in the longer and half an inch in the shorter diameter. A central post arises from the plate to a height of three-sixteenths of an inch. It has a shoulder where it joins the plate, is perforated with a round hole from the under surface of the plate to its own apex, and is cross-cut down to the shoulder in the short axis of the plate. In using these appliances, the wire or other form of suture is passed through from below, bent into the slot, wound two or three times around the post, and then carried across the post through the slot again. They can be sterilised by boiling and used



indefinitely, can be bent to fit irregular surfaces, and tightened or relaxed at will. They are made by Messrs. J. Stevens and Son of Toronto, and Messrs. J. Reynder and Co. of New York.

Analytical Records.

MEDICATED WOOLS.

(J. L. BULLOCK & CO., 3, HANOVER-STREET, HANOVER-SQUARE, W.)

MESSRS. BULLOCK and CO. have sent us three samples of their menthol wools. These are respectively impregnated with 5, 10, and 20 per cent. of menthol. The weaker preparations are intended to be used as small pledgets inserted into each nostril, and when thus employed they have been found useful in influenza. The stronger form is intended for use in an antiseptic inhaler in cases of phthisis.

RILEY'S TEMPERANCE PALE ALE, NON-INTOXICATING, SPARKLING.

(RILEY'S TEMPERANCE HOP ALE AND BEER CO., LIMITED, 6, VIGO-STREET, REGENT-STREET.)

We are inclined to think highly of this temperance beverage. In addition to the social temptations which beset the total abstainer, he frequently suffers from the monotony of the substitutes which are offered to him. He wearies of ginger-beer, lemonade, and soda-water, and

cannot always be drinking tea. If he be a recent convert, the memory of his "glass of bitter" will cling to him, and he will miss the agreeable tonic of the hop. The highest praise that we can give to this preparation is to say that it is very like pale ale. The hop is unmistakable, and there is a distinct fulness or "body" which, with the effervescence due to carbonic acid, are strongly reminiscent of Burton-on-Trent. The sample examined by us was not absolutely, but only practically, non-alcoholic, for it contained 0·89 per cent. by weight of alcohol, a quantity which would be ignored in fermented ginger-beer. It yielded 2·96 per cent. of solid residue, and 0·07 per cent. of ash. Sugar, probably maltose, was present, but we found no dextrin or starch.

HEALTH-GUARD.

(THE HEALTH-GUARD CO., 42, BATH-STREET, GLASGOW.)

This antiseptic and disinfectant material is described as "a patented combination of quadriborate and salicylate of soda," and, in fact, boric and salicylic acids and soda are found in it by analysis. It is recommended not only as an ordinary disinfectant, but also for the preservation of meat, fish, milk, &c. Dr. E. J. Mills, F.R.S. of Glasgow, who advocates its use for domestic drains and waterclosets, and for the purification of drinking water, also suggests that it may be incorporated with advantage in the paste used by paperhangers. With this last suggestion we entirely concur, but we cannot agree that the mixture is suitable for ordinary sanitary use, and still less can we advise its addition to articles of food or drink.

STERN'S PUMILINE PREPARATIONS.

(G. & G. STERN, 62, GRAY'S-INN-ROAD.)

We have before us half a dozen preparations of the now well-known pumiline, the terpine or essential oil of the *Pinus pumilio*. They consist of essence, extract, jujubes, ointment, liniment, and soap, and from all the characteristic and fragrant oil, said to be obtained only from trees growing near the snow-line, can readily be separated. Pumiline has been skilfully incorporated in the various preparations.

COX'S HYGIENIC COCOA EXTRACT.

A well-prepared cocoa, containing only 22·92 per cent. of fat, and no trace of any adulteration. It is fairly soluble, and leaves but little husk.

VALENTINE'S PREPARATION OF MEAT JUICE.

(MANN S. VALENTINE, RICHMOND, VA., U.S.)

This preparation, to which some years ago we accorded high praise, has now attained to very general recognition as a concentrated and delicately flavoured liquid meat food. That its continued popularity is deserved is shown by the following partial analysis, in which the results are stated in parts per cent.:—Water, 54·32; organic matter, including 3·3 per cent. nitrogen, 34·85; ash, containing much phosphate, 10·83; absolute alcohol extracted, 26·41 per cent., of which 2·97 was nitrogen. The preparation contained free albumen, showing that it is not merely a meat stimulant, but in addition a flesh-forming food.

THURBERS' CEREALINE FLAKES.

(THURBERS, GATES, & CO., ST. GEORGE'S HOUSE, EASTCHEAP.)

Clean and delicate white flakes. Under the microscope nothing but pure and partially cooked wheat flour was detected.

DAHL, OR INDIAN LENTIL REVALENTA FOOD.

(MACLEAN & SONS, EDINBURGH; HERTZ & COLLINGWOOD, LEADENHALL HOUSE, LONDON.)

Our analysis indicates that this is a well-prepared and unadulterated lentil flour. Its value in dietetics is well known.

LANOLINE TOILET SOAP.

(BURROUGHS, WELLCOME, & CO., SNOW-HILL BUILDINGS.)

Lanoline toilet soap is an excellent and valuable preparation, in which there is distinct excess of lanoline over alkali. Petroleum ether readily extracts lanoline. The soap cannot fail to become popular with physicians.

ICHTHYOL-LANOLINE SOAP, CONTAINING 10 PER CENT. ICHTHYOL.

(BURROUGHS, WELLCOME, & CO., SNOW-HILL BUILDINGS.)

Ichthyol, the fish oil lately recommended for skin affections, is in this preparation associated with lanoline. There is great advantage in the admixture, for the absorbent power of the skin for lanoline is now universally recognised. We have found no difficulty in separating the fish oil.

GOLDEN GIN.

(CHRISTOPHER HILL & CO., 47, ALDGATE HIGH-STREET.)

This is described as specially distilled from pure malt, and is guaranteed to be six years old, and stored for the whole of that time in sherry casks. In this spirit it is easy to recognise the smell and taste both of gin and of sherry. It is soft and mellow in taste, and quite unsweetened. Analysis gave 37·61 per cent. by weight of alcohol, equal to 78·39 per cent. of proof spirit. The residue, dried at 100° C., amounted only to ·33 per cent., and the ash to ·03 per cent. Ferric chloride gave a distinct reaction of tannin, evidently from the wood of the cask.

CERTIFYING SURGEONS' ASSOCIATION.

THE Association of Certifying Surgeons held their first annual meeting for the election of officers &c. on Tuesday, the 11th inst., at the Queen's Hotel, Manchester. There was a good attendance from all parts of the kingdom. The hon. secretary's report showed that a large amount of work had been done by the Association during the past twelve months, and that a considerable quantity of literature on the Factory Acts had been distributed. The treasurer's report was likewise very satisfactory, he having a considerable balance in hand and all expenses for the past year paid. The following officers were elected:—Mr. F. H. Walmsley (Salford), President. Dr. J. T. Arlidge (Stoke-on-Trent), Messrs. C. Johnson (Lancaster), G. M. Stansfield (Bristol), Dr. C. F. Moore (Dublin), and Dr. Kidd (Ballymena), Vice-Presidents. Dr. J. C. Eames (Farnworth), Hon. Treasurer. Dr. J. Holmes (Radcliffe), Hon. Sec. Mr. R. Gray, Hon. Sec. for Ireland. Drs. Livy, E. Moore, F. M. Pierce, J. Barr, T. Crowther, J. Lawson, J. Watson, Purdon, J. Johnson Bailey, R. Patrick, R. Settle, and C. A. Greaves; Messrs. W. H. Hughes, J. H. Wright, W. H. Barr, J. K. Davidson, H. M. Fernie, J. White, W. E. S. Burnett, W. Stanwell, T. Fort, F. H. Wood, C. J. Trimble, W. F. Dearden, and R. Atkinson, Executive Committee. It was unanimously decided that the next annual meeting be held in Leeds. After the business had been concluded the members dined together. Amongst others present at dinner was Mr. R. W. Coles, late Her Majesty's Superintending Inspector of Factories for the North of England. The Chairman proposed the health of Mr. R. W. Coles, the guest of the evening, and on behalf of the Association presented him with an illuminated address on his retirement from the official position of Her Majesty's Superintending Inspector of Factories for the north of England. Mr. Coles, in his reply, alluded to the fact that he had been thirty-five years in the service of the Factory Deparement. During that time he had found the certifying surgeons of the greatest help to him in the carrying out of the Factory Acts, so much so, indeed, that he felt that their services could not be dispensed with under the present Acts. Dr. J. Watson proposed "The Factory Department, coupled with the name of Mr. Alexander Redgrave, C.B., the chief of the department." Dr. J. T. Arlidge, President of the late Association of Certifying Surgeons, replied to the toast of his health, which was proposed by Dr. F. M. Pierce.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 22, 1890.

THE movement for adding a teaching side to the University of London is undergoing another development. For the scheme which was presented by the Senate of the University of London for consideration by the representatives of University College and King's College, as a basis of conference, another has been substituted, in accordance with the views of Professor CAREY FOSTER, who is both a member of the Senate and a professor on the teaching staff of University College. It follows the provisional scheme of the Senate of the University in its main clauses so far as the constitution of the University, the *personnel* of the Senate, and the formation and powers of Faculties and Boards of Studies are concerned, but makes more liberal concessions to the teaching colleges in respect of the granting of degrees to their own students. Instead of exempting such students from passing the Matriculation Examination on certain conditions, this scheme proposes that all candidates shall pass the same Matriculation Examination, but that at all examinations subsequent to this, "the scope of each, so far as deciding the general subjects to which it shall relate, is to be determined by the University; but the details shall be decided, in the case of students of a constituent College, not by syllabuses issued by the University, but by the course of instruction given in the College." Further conditions are laid down to ensure that such courses amount to an adequate treatment of their respective subjects, and, by associating an external examiner appointed by the Senate with the College professor, to secure an effective control by the University over the Collegiate examinations. A conference on this new basis is to take place next week. But these proposals concern only the Faculties of Arts and Science, those of Medicine and Laws being expressly excluded from Professor CAREY FOSTER'S scheme; so that the original suggestions as to a lowered preliminary scientific examination, and the establishment of an inferior grade of Doctors of Medicine, still stand as part of the scheme. Whether University and King's Colleges will agree to the proposals now put forward we cannot tell. If they do, however, the possibility of forming a real local and teaching university in London, with the function of granting degrees to London medical students on fair and equitable terms, will unfortunately be rendered more difficult, for we should have to look elsewhere than to those teaching colleges for the Faculties of Arts and Science. A special point which has to be safeguarded is that London medical students should no longer continue under their present disabilities, and there is no slight danger that if the requirements of the professors in arts and science are granted by the Senate, and can be passed through Convocation, the clauses relating to the Faculty of Medicine may be dropped. In such a case the medical examinations would remain "Honours Examinations," as they are called by the Royal Commissioners; and as the Royal Colleges are expressly refused powers to grant degrees by these Commissioners, the medical student in London would be left in his present condition, with his grievances, now publicly admitted in the report of the Commission, unredressed. It is absolutely necessary that the teachers in our medical schools should take steps to prevent such a disastrous termination to the agitation, for it is sufficiently clear that the Senate of the University, even if they had the desire, are powerless to push the medical part of their scheme through Convocation. We question if, in the event of their offering privileges which would satisfy the teaching colleges, those proposals would be accepted by Convocation, whilst the clauses affecting medical subjects will scarcely find a single supporter in that body. The authorities of the University of London are placed in a very difficult position in respect of medical degrees. The graduates most strenuously object to these being lowered. The Royal Commissioners state that this must be done; but the institution of a lower-grade degree would bring the University into conflict with the Royal Colleges of Physicians and Surgeons, whose licence-giving power would then be seriously endangered. A new teaching university would be free, and could recognise the strictly technical examinations of these corporations. As was clearly pointed out last week to the deputation from the provincial colleges by the Lord President of the Council, the Commissioners were unanimous on one point—that there ought to be some teaching university for this vast metropolis. If the existing University takes up this work, it must do so in earnest, and not merely in a niggardly fashion under compulsion. Professor LAWSON TAIT may urge that this is not needed, and that Birmingham students only desire to be affiliated to the University of Durham. With regard to this matter, however, it will be seen, by reference to the letter of our Birmingham correspondent, that the Senate of the latter University "regret that the time does not appear to them to have arrived when it would be desirable to affiliate the medical department of Queen's College with the University." If this University had given exceptional privileges to any other medical school than its own, such privileges would have been demanded by, and must have been accorded to, every other school in the kingdom not affiliated to a university, and we would point out that no London medical school is affiliated to the University of London, or has any special relation to, or connexion with, that institution.

WE have from time to time directed attention to the insignificance of certain conditions of the uterus which have been supposed to hold an important place in the pathology of that organ, and have combated pathological theories which are not only wrong, but which also involve methods of treatment that are often dangerous to life and generally injurious to the health both of body and mind of the patients concerned. It has been a misfortune to women that from the time—now fifty years ago—when attention became directed to the diseases peculiar to the sex, their study has proceeded along very narrow lines, and pathological theories have been formulated upon insufficient and often erroneous data, and made the basis of universal treatment. At one time inflammation of the cervix was the theory generally accepted, and its treatment consisted in

the application of caustics to the os uteri once or twice a week for months. After a time stricture of the cervical canal shared the field with inflammation, and this was supposed to be cured by the introduction of bougies at weekly intervals for an indefinite period. Subsequently flexions were discovered, and displacements were soon magnified into an efficient cause of all the ills of women, and upon them was built the superstructure called "the mechanical system of uterine pathology." Their treatment by pessaries of all kinds, shapes, and substances followed as a matter of necessity, and the pessary required such careful looking after that in many cases it demanded a daily visit. After this the great discovery of conical cervix and pinhole os was made, and chronic inflammation and stricture of the canal rapidly retired from the field. This discovery demanded a cutting operation, and the wearing of a stem for weeks or months. The method proved dangerous, occasionally even fatal; it has, however, been practised to a large extent, and is still occasionally adopted. Yet later, laceration of the cervix was discovered to be the great cause of suffering in women, and "the greatest surgical triumph of this century" was invented for its cure. This surgical triumph consists in paring the lacerated surfaces and stitching them together. Then massage came to the front. It is true that this mode of treatment is not specially directed to the cure of uterine diseases, but rather to the cure of cases which a few years ago would have been regarded as uterine, and would have been treated on one of the plans enumerated above. These are some of the theories which have been held with regard to the diseases of women and the methods employed for their cure. Against these views and methods of treatment the voice of the more thoughtful practitioners in this country has often been raised, but in America "minor gynæcology" of the worst type has always been encouraged, and its practitioners have been regarded as the advanced guard of the department, so that we find ourselves pleasantly startled and surprised on reading a paper by a leading American physician, Dr. GOODELL of Philadelphia, on the Abuse of Uterine Treatment through Mistaken Diagnosis, published in the *Medical News*. We heartily congratulate Dr. GOODELL on his emancipation from views, some of which have been proved by laborious researches to be wrong, while others are, on the surface, of such an improbable character that they should be received only on the production of irrefutable proof of their correctness.

It has hitherto been the custom among certain gynæcologists to accept any theory of uterine disease put forward unless it is disproved. No custom has been more disastrous to the scientific progress of this department of medicine, and it should be reversed; no theory, by whomsoever advanced, should be tolerated unless proof of it be forthcoming. Had this rule been observed, uterine pathology would not have been in its present chaotic state, and Dr. GOODELL would not have to complain of the abuse of treatment through mistaken diagnosis. Dr. GOODELL concludes his paper with the following watchwords as broad helps to diagnosis.

In the first place, "always bear in mind, what another has pithily said, 'that woman has some organs outside of the pelvis.' Each neurotic case will have usually a tale of fret or grief, of cark and care, of wear and tear. Scant or delayed or suppressed menstruation is far more frequently the result of nerve exhaustion than of uterine disease. Anteflexion *per se* is not a pathological condition. It is so when associated with painful menstruation, and only then does it require treatment. An irritable bladder is more often a nerve symptom than a uterine one. In a large number of cases of supposed or actual uterine disease which display marked gastric disturbance, if the tongue be clean, the essential disease will be found to be neurotic; and it must be treated so. Almost every supposed uterine case characterised by excess of sensibility and by scantiness of will-power is essentially a neurosis. In the vast majority of cases in which the woman takes to her bed and stays there definitely from some supposed uterine lesion, she is bedridden from her brain, and not from her womb. I will go further, and assert this to be the rule, even though the womb itself be displaced, or it is disordered by a disease or by a lesion that is not in itself exacting or dangerous to life. Groin aches and sore ovaries are far more commonly symptoms of nerve exhaustion than of disease of the appendages. Uterine symptoms are not always present in cases of uterine disease. Nor when present and even urgent do they necessarily come from uterine disease, for they may be merely nerve counterfeits of uterine disease."

In the main these conclusions are sound and healthy, but the author shows some hankering after his old views, especially with regard to anteflexion, and a little too much affection for his new love — nerve exhaustion,—a syren which has proved as dangerous as any uterine fad. In spite of these blemishes, we cannot help feeling that the outspokenness of Dr. GOODELL will prove an enormous benefit to the study of the diseases of women in America. Already even the effects of this outspokenness are observable. In a discussion on painful menstruation which took place recently in the Obstetrical Society of Philadelphia, only a small number of the speakers proved themselves to hold orthodox views upon "minor gynæcology." The majority expressed views which were strongly antagonistic to the meddlesome local treatment which has been in favour for so long a time. This is highly satisfactory. We shall accordingly look forward with pleasure to sound scientific and pathological work from the obstetricians of America, instead of the "inventions" in pessaries, instruments, and minor operations for conditions of which so little is known.

WE have received a copy of a report submitted to the Worcester County Council by their Sanitary Committee, in which the grounds are set forth which, in the opinion of the committee, necessitate the appointment of a medical officer of health for the county. The Council were doubtless largely influenced by this report in their recent decision no longer to postpone making such an appointment; and since it has been alleged by some County Councils that until the transference to them of the powers, duties, and liabilities which were embodied in the Provisional Order of the Local Government Board of June 4th, 1889, made under Section 10 of the Local Government Act, 1888, and which Order has not yet been confirmed, it is useless to appoint county health officers, it will be well to note the experience in this matter of a County Sanitary Committee who have been anxious properly to fulfil their

duties. They state, generally, that they have found themselves to be fettered in the exercise of the powers conferred upon them in consequence of the postponement of the appointment of a health officer to advise them; and they then proceed to enumerate some of the difficulties which they have had to contend with. Thus, the Improvement Commissioners of Stourbridge have forwarded to them an application, in which complaint is made of the foul state of the river Stour—a complaint which the committee believe to be well founded. But before the question can be entertained by them they declare it to be necessary that they should have a report from an expert, specifying the nature and the extent of the pollution in question. It is known that the grievance is a serious one and of wide extent, and it is stated that even a preliminary report would necessitate an expenditure of at least fifty guineas, further expenses being involved at subsequent stages of the proceedings. And this is only one out of a number of similar remonstrances certain to be made as to the state of the streams within the jurisdiction of the county. Therefore the expense of the proceedings must necessarily be very heavy as well as uncertain, unless the matter could be dealt with, and the necessary scientific evidence be largely obtained, through the services of a permanent health officer. Then, again, the Council have instructed their committee to prepare the requisite bye-laws for the prevention and suppression of those nuisances not already punishable in a summary manner by virtue of any Act, a power which is conferred upon County Councils under the Local Government Act. Here, also, the Sanitary Committee have failed; for they report that, in the absence of the advice of a medical officer of health, they have not found themselves able in a satisfactory manner to frame any such code as is required.

As is well known, it is the duty of medical officers of health for local districts to send to the Councils of their respective counties copies of their annual reports. This requirement, as pointed out by the Sanitary Committee of the Worcester County Council can only be properly followed out provided the reports are carefully considered and their matter collated for the purposes of the whole county; and this duty is, obviously, one that must be performed by a superintending health officer. And, in the county of Worcester, twenty-six out of a total of thirty-six sanitary authorities have already adopted the Infectious Disease (Notification) Act of 1889. If this Act is to be of any substantial use, all reports made under it ought, as pointed out by the committee, to be available for certain county purposes. To this end a summary at least of the material they severally contain ought to be sent periodically to a county focus, where the material could be so collated as to be at once made serviceable for all the sanitary authorities within the area of the county; and here again a medical head is absolutely needed.

For these and other reasons the committee strongly urge the appointment of a thoroughly skilled health officer; and so convinced are they of the necessity for taking this action without further delay that they submit to the County Council that they can no longer satisfactorily continue to fulfil the duties laid upon them in the absence of such an officer. This report, we find, was adopted by the Council on the 3rd inst., and we trust that the explanation offered as to the principal grounds which influenced them in taking the action they have done may be helpful to other County Councils who are still hesitating in the matter.

Annotations.

"Ne quid nimis."

ROYAL COLLEGE OF SURGEONS.

AT the end of last month a deputation from the Association of Members of the Royal College of Surgeons attended upon Lord Randolph Churchill by appointment to discuss with him the steps to be taken for promoting in Parliament a Bill to give effect to the College franchise reforms so long advocated by the members. Lord R. Churchill, after carefully considering the matter, expressed himself entirely in favour of the movement, but recommended that, in view of the large number of Bills about to be introduced into the Lower House this session, it would be advisable to endeavour to bring this Bill before the House of Lords in the first instance. He therefore recommended the deputation to ask Lord Dunraven to move for its introduction in that House, and promised to write to the latter peer inviting his attention to the matter. In the result, Lord Dunraven received on Jan. 30th a deputation of Members of the Royal College of Surgeons, introduced by Dr. Danford Thomas and attended by Mr. B. F. C. Costelloe, the counsel for the plaintiffs in the Chancery action, "Steele *v.* Savory." After a long and sympathetic hearing of the Members' grievances Lord Dunraven promised to give the subject his best attention. We are now informed that a few days ago Lord Dunraven wrote to the introducer of the deputation saying that "he will be pleased to introduce a Bill into the House of Lords on the lines suggested."

THE STATISTICS OF LUNACY.

A LONG and careful examination of the materials at present available for illustrating the statistics of lunacy, which was submitted by Mr. Noel A. Humphreys to the Statistical Society on Tuesday evening last, resulted in confirming in a striking way the main conclusions on this important subject for which we have repeatedly contended in these columns. The apprehensions which have in recent years been generated by a superficial reading of the figures from time to time published by the Lunacy Commissioners were shown to be, if not absolutely unfounded, at least very exaggerated, and quite unwarranted by the facts. It has frequently been stated by the commissioners themselves that grounds exist for the conclusion that year by year a constantly increasing proportion of the insane population is brought within their jurisdiction, and Mr. Humphreys has illustrated this proposition by a number of ingenious investigations. He has shown most satisfactorily, by a comparison of the census returns with those made by the commissioners, that there exists outside the institutions over which they exercise oversight a large body of insane persons, forming a reserve from which it is quite possible that, as the custom of consigning the mentally unsound to asylums grows in popularity, a large accession to the ranks of the registered insane should be forthcoming. He shows also that the increment which has actually been recorded agrees strikingly in some of its features with what might be anticipated to be the character of such a growth of numbers as might arise from this cause; for the rate of increase from year to year exhibits a steady and even a rapid diminution. If the

increase resulted from a more widespread existence of insanity through the general population it could hardly happen that this should be so. But, on the other hand, it is precisely what would happen if the source from which the annual increment is derived were being year by year reduced by the continuous transference from the reserve to the register of persons of the class under consideration. So far, Mr. Humphreys' results may be accepted with sincere satisfaction without occasioning any great surprise; or, indeed, producing any marked effect upon public opinion. In this view more importance attaches to the criticism which he passed upon the lunacy returns and other statistics bearing upon the statistics of lunacy. We fully concur in the views which Mr. Humphreys expressed as to the great desirability of obtaining the fullest and most exact information upon a point of such vital importance. On the other hand, it is impossible not to see that great difficulties have to be encountered in the collection of the requisite materials, and it is easy to believe that the work of criticism is easier than the task of finding a remedy and putting it in use. This notwithstanding, it may be hoped that some improvements in the form and substance of future returns will result from the consideration of Mr. Humphreys' very carefully elaborated suggestions.

THE FUNDS OF THE ROYAL INFIRMARY, GLASGOW.

A WRITER in the *Glasgow Herald*, commenting on a deficiency in the regular income of this fine institution, thinks the deficiency might be made up in some degree by more liberal church collections. Perhaps so. The Irish make a large portion of the infirmary patients. Thus, of the patients treated 3640 were Scotch and 1159 Irish. The church collections altogether seem somewhat small—£859. But none have been received from the Irish congregations. This must be from oversight, and probably only needs to be pointed out to be altered. In London Cardinal Manning has been one of the foremost promoters of the Hospital Sunday Fund. More than £25,000 is expended yearly by the managers of the Royal Infirmary.

THE SUTURE OF ARTERIAL WOUNDS.

DR. JASSINOWSKY has published, as a graduation thesis in Dorpat, a series of experiments made on animals for the purpose of determining the conditions under which it is possible to stitch successfully wounds in arteries. He operated on horses, calves, and dogs. The plan adopted was to dissect down to the artery, to open the sheath, and, after applying a clamp to the vessel, to stitch the wound with silk, the needle passing through the external and middle coats only; a reef knot was then tied, and the ends cut off close. When the clamp was removed the vessel was compressed, and all the fasciæ and skin incisions carefully stitched with interrupted sutures. The external wound was then sealed by means of photoxylin, a substance which, though first used by photographers, has recently been introduced into surgical practice as an improvement on collodion for sealing wounds. In all the cases operated on the wounds healed satisfactorily. When viewed from within, an arterial wound that has been recently sewn appears as a fissure of the intima filled up with blood-corpuscles, which form a minute thrombus, causing the sulci of the intima to disappear. Later on a cross section through the sulci gives the appearance of a funnel-shaped space filled with a homogeneous, horny substance. The endothelium is much augmented. In time the whole of the coats at the wounded spot become thickened, and the elastic membrane is not to be found. Dr. Jassinowsky concludes that wounds not extending beyond half the circumference of a large artery, also longitudinal and oblique wounds, may be successfully sutured if antiseptic precautions can be thoroughly carried out, as was the case in all his experiments. When the vessel lies very deep, however, it is impossible to get at it sufficiently well to practise the delicate manipulation required in the operation. Of course, after a wound has occurred, the sooner operative measures are undertaken the better. He calls attention to the peculiar blowing or rasping systolic murmur always heard over a wounded artery, and the thrill which is perceptible to the touch, which constitute what is known as "Wahl's phenomenon," a discovery made by the eminent Dorpat professor just deceased, as a valuable diagnostic sign in cases where it is possible that arteries may have been wounded.

THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

AS we announced last week, Mr. R. D. R. Sweeting, M.R.C.S., L.S.A., medical superintendent of the Western Fever Hospital of the Metropolitan Asylums Board, has been appointed one of the medical inspectors of the Local Government Board. Mr. Sweeting has, during an extended term in the office he now relinquishes, acquired an exceptional knowledge of the various infectious fevers, and his contributions to the annual reports of the Statistical Committee of the Asylums Board have shown that he has used his special opportunities in a way to extend our knowledge of some of the obscurer phases observed in the specific fevers. In 1883 Mr. Sweeting was awarded the Howard Prize for his essay on the Sanitation of Public Institutions; and subsequently, whilst serving as an occasional medical inspector under the Local Government Board, he prepared a number of sanitary reports dealing with the prevalences of disease and with the question of river pollution. He is also treasurer to the Epidemiological Society, whose Transactions contain some excellent papers by him on Vaccination. Mr. Sweeting's appointment is due to the resignation of Dr. Stevens, who was one of Sir John Simon's earliest colleagues in the department of public health. We regret to learn that Dr. Stevens has, by reason of ill-health, been compelled, after an active career extending over many years, to seek repose from his official duties.

THE "DOUBLE CYANIDE."

A SHORT TIME after Sir Joseph Lister introduced as a new antiseptic a "double cyanide of mercury and zinc," questions upon its composition were raised. These induced Professor Dunstan and Mr. Bloch to undertake further investigations at the Research Laboratory of the Pharmaceutical Society. Their results were brought before a meeting of the Society on the 12th inst. From the experiments Professor Dunstan concluded that there could be no doubt that a double cyanide, with the formula $ZnHg(CN)_4$, cannot exist. He found that while the greater part of the mercuric cyanide was evidently in a free state, and could therefore easily be dissolved by cold water, a smaller part was not thus removed, in spite of the solubility of mercuric cyanide. To determine the precise nature of this smaller proportion was the object of his inquiry. Is it (1) chemically combined as a double cyanide? or (2) as a compound of hydroxycyanide with zinc cyanide? or (3) as a compound of zinc hydrate (or hydroxycyanide)? or (4) is it merely *occluded* by particles of zinc cyanide during precipitation, so that in consequence of a protective coating of insoluble zinc cyanide the water is unable to come into contact with the mercuric cyanide? Of these four hypotheses the last was the only one which stood the test of experimental verification. It may be observed that Professor Dunstan uses the term *occluded*

in its strictly etymological sense. It was shown in the course of the paper that the amount of occluded mercuric cyanide contained in the material mainly depended upon the quantity of water in which the reacting compounds were dissolved. By increasing the quantity of water the occluded mercuric cyanide will be reduced to a very small amount, but by diminishing the quantity of the water as far as possible the amount of occluded mercuric cyanide may be raised to about 36 per cent. In the course of the subsequent discussion, Sir Joseph Lister laid stress upon this fact, remarking that it was very important that it should be pointed out in order that manufacturers might be uniform in their action in this respect, and that they might not have one man using a pint of water and another only a quarter of a pint; because that would alter not only the quantity, but also the quality of the product.

THE INTERNATIONAL ALCOHOL CONGRESS.

CHRISTIANIA is to be the seat of the next International Congress convened for the suppression of the abuse of alcoholic drinks, and meetings will be held from Sept. 3rd to the 5th of the present year. The choice of the Norwegian capital was made by the permanent committee which sits under the presidency of Dr. Fovel at Zurich, and 1890 was substituted for 1889, on the ground that the Paris Exhibition made the latter year less favourable for a numerously attended gathering. The programme promises to be an interesting one, including as it does the following subjects: (1) The means which have proved so successful in Norway in lessening the evils of alcoholism; (2) the results of the Gothenburg System; (3) the alcohol question in relation to the upbringing of the young; (4) the deterioration of indigenous tribes by the spirit trade; (5) substitutes for alcoholic beverages as weapons in the warfare against alcoholism. It is in contemplation to combine with the deliberative programme of the Congress an exhibition, as comprehensive as possible, of all the journals, books, statistical reports, drink samples, &c., illustrative of the international movement. It is the main object of the Congress to throw light on the success attained by different countries and by different means in combating the evils of alcoholism. The discussions will be conducted in English, German, and French.

FATALITY FROM CHLOROFORM.

A CASE of some interest, from the fact that a necropsy was obtained, is recorded in the *Western Morning News*. E. V——, a young lady of twenty-four, was admitted into the Maud Hospital, Exmouth, to undergo an operation for lupus affecting the face. She was placed under the influence of chloroform, a Skinner's inhaler being used, and about twenty drops being allowed to fall upon the flannel. The patient inhaled for seven or eight minutes, when she was considered fit for operation; the face piece was removed, and the scraping of the nose was commenced. In about three minutes after this the administrator saw signs of returning consciousness and gave more chloroform; "then," the report before us says, "she suddenly stopped breathing." The tongue was seized with forceps and withdrawn from the mouth, while Silvester's method of artificial respiration was carried out and continued for half an hour. The condition of the heart was not noticed at the moment of respiratory failure. Half an hour's performance of artificial respiration was fruitless; "the deceased never showed a sign of life." At the necropsy, conducted by an independent authority, the heart was examined, and pronounced sound, and was stated to give post-mortem evidence "that the heart acted after breathing stopped." The patient had had chloroform successfully administered on several occasions before, and had given no anxiety; she was also organically healthy. The verdict returned was one of "Accidental death," accompanied by a rider exonerating the administrator from all blame, as the Coroner's Court found the anæsthetic had been skilfully given, and all means adopted to resuscitate the deceased. In the course of the inquiry it transpired that a galvanic battery was used to stimulate the heart, and nitrite of amyl inhalation practised. Out of 200 administrations during four years at the Maud Hospital, one death (the present one) had occurred, and this, the report before us says, was considered by one of the medical witnesses as "satisfactory." The case has especial interest from the following points: The patient was in good health, had no respiratory or cardiac disease; had experience both of the operation, the anæsthetic, and the doctors who were attending her, and felt no fear; the chloroformisation was skilfully performed by a gentleman of no small experience (500 cases) both in a large London hospital and at the Maud Hospital, without any previous death during his administrations; the method employed lent itself to only small quantities of chloroform being evaporated (twenty minims), which were fully diluted with air. No undue hurry was permitted, from five to eight minutes being allowed to elapse before the operation was commenced, so that surgical shock was avoided; careful watch was kept over the pulse and respiration; instantaneous measures for resuscitation were resorted to when the administrator found respiration had stopped, and yet death took place; death due, we are told by the medical witness who performed the post-mortem examination, to asphyxia, the heart having ceased to beat subsequently to respiratory failure.

PROOFS OF BACILLARY MIGRATION FROM BLOODVESSELS.

DR. LATIS of Modena (*Centralblt. f. Allg. Path. und Path. Anat.*, No. 3) reports experiments tending to show that the walls of the bloodvessels are so modified by the virus of anthrax as to readily lead to diapedesis; and hence to infer that direct transference of the disease from the maternal to the fœtal organism is possible, without assuming (as has been done) the necessary antecedent condition of placental hæmorrhage. He introduced into the peritoneal cavity of guinea-pigs small portions of elder pith thoroughly sterilised by boiling, and then inoculated the animals with anthrax. Subsequent microscopical examination of sections of the pith showed it to contain anthrax bacilli as well as blood-corpuscles. In others he excited keratitis, and detected the bacilli in the corneal epithelium and occasionally in the plasmatic channels. By varying the time after infection at which the animals were destroyed, he found that, in the mesentery the first effect was a migration of leucocytes, which gradually increased, and which was followed later by an invasion of bacilli and red corpuscles. He also found that when cinnabar was injected into the jugular vein during these experiments, its particles appeared together with the bacilli in the elder pith or mesentery.

LOCAL SANITARY INSPECTION.

WRITING from the Sanitary Department of the City of Glasgow, Mr. Peter Fyfe refers to our remarks last week under the above heading. He entirely endorses what we said as to the term "inspector of nuisances" being one which should not be applied to officers of whom we expect skill, and he gives it as his experience that even moderately educated officials resent the term. He also points out that although the term "sanitary inspector" was used in Scotland as far back as the Act of 1867, yet the English Public Health Act of 1875 still maintained the former objectionable title. We would gladly see the title changed; but if all such officers are to have the title of "sanitary in-

spector," the public will demand that they shall have at least some partial knowledge of the first principles of health and sanitation, and not be, as some inspectors of nuisances are, utterly ignorant of the very elements of the subject. What is really wanted is some test of competency before election. Mr. Fyfe mentions incidentally that there are bad appliances as well as incompetent officials, and he informs us that in the matter of drain-testing there is now in use in Glasgow an apparatus which throws, either by steam or water power, such a volume of pungent smoke into a drain as effectually indicates in a very short time defects that have under other methods altogether escaped detection by real experts.

THE EMPLOYMENT OF HYPNOTISM FOR PHYSIOLOGICAL INVESTIGATION.

DR. SEGAL is reported to have endeavoured by hypnotising two female subjects to decide the question whether there is a single oculo-motor centre for both eyes or whether each eye has its own special centre. The right eyelid of the hypnotised individuals was raised, and it was suggested to them that they should keep the right eye immovable, and when this suggestion had been complied with it was further suggested that the left eye should be turned inwards and outwards. In one of the individuals this was accomplished, but no movements of the left eye in a vertical direction could be obtained and no binocular divergence could be produced. The second patient could turn the left eye up or down and inwards or outwards, and here again no binocular divergence was perceived. Experiments on the reaction of the pupils were further tried on the first and on a third patient by telling them that all around was black, and consequently nothing could be seen; this caused the pupils to dilate. Similarly they contracted when it was suggested that the darkness had passed away, and that the sun now shone. Dr. Segal concludes from his experiments that each eye has its own oculo-motor centre, just as the other ocular nerves have, but that the two, in consequence of continual associated movement, are very closely linked to one another.

THE LIVERPOOL PUBLIC ABATTOIR COMPANY.

MUCH interest is being taken in Liverpool in the question whether the Town Council will grant a renewal of the lease now held by the Abattoir Company. The medical profession have strongly memorialised the Council against it, but there is some fear that, listening to the demands of the company, they may inflict a lasting injury upon that part of Liverpool in which the abattoir is situated. There is not the least doubt that the slaughtering of animals in thickly populated areas is highly objectionable. London has long had experience of the maintenance of private slaughter-houses in the rear of butchers' shops, and efforts have from time to time been made to rid the metropolis of their existence, but in vain. Liverpool is in the fortunate position that it can, without difficulty, compel the Abattoir Company to remove their premises to a proper distance from the centres of population; and if it fail to take advantage of this opportunity, the future of the city will be distinctly prejudiced. The time has long passed by, we hope, when absolute injury to health will be required for the purposes of guiding public policy in such a matter. That the emanations from slaughter-houses are prejudicial we do not doubt, and with them in the present case must be reckoned those of the trades which must be necessarily carried on in connexion with the abattoirs. If its existence in its present condition were an absolute necessity for the meat-supply of Liverpool, the inhabitants would have to submit; but experience, in which London shares, has amply demonstrated that dead meat from animals killed at a distance from the city can be conveniently and economically taken into it, and that neither butchers nor customers will suffer any loss. We should not have thought that there could be the least hesitation in determining the answer which should be given to the Abattoir Company. Considerations of the welfare of Liverpool undoubtedly indicate the refusal of the extension of the lease, and we sincerely trust that the Town Council will not allow themselves to be influenced by any other thought.

FOREIGN DOCTORS IN FRANCE.

M. FALLIÈRES, the Minister of Public Instruction, addressing the commitee appointed to investigate the practice of medicine in France, said the present system could not be maintained, as it offered no guarantees of professional capacity. Does M. Fallières really mean what he seems to say, that English qualifications are no guarantee of professional capacity? This is a most illiberal sentiment for a Republican Government; and we venture to say, as regards Great Britain, a most unjust one. M. Fallières suggests that foreign doctors ought to submit their diplomas to the judgment of the French faculties, who would judge if they are on a par with those granted to French practitioners. But, nevertheless, he thinks foreign medical men should undergo the final examination to which French candidates have to submit. He is pleased to admit that in health resorts exceptions may be made. With regard to dentists, he would insist on residence for a term of three years in the house of a duly qualified French dentist, and registration at a faculty or school of medicine.

TREATMENT OF INTESTINAL OCCLUSION.

DR. KOLLMAN mentions in the *Münchener Medicinische Wochenschrift* a case of occlusion of the small intestine in an old woman, who, after opiates and morphia injections had been unsuccessfully given in order to arrest the violent vomiting, showed signs of such extreme weakness that operative measures were out of the question. He therefore determined to act on the lower part of the bowel by means of glycerine injections, while keeping the upper part of the intestinal tract quiet by the administration of ice and by ice-cold applications over the stomach. In this way the peristaltic action of the gut below the spot where the obstruction existed was stimulated while the part above this was kept at rest. The result was satisfactory, for on the second day a motion was passed and the patient recovered.

INTERNATIONAL CONGRESS OF HYGIENE.

A DEPUTATION, consisting of Sir Douglas Galton, Professor Corfield, Dr. Mapother, Mr. Shirley Murphy, and others, was received by the Lord Mayor on Tuesday last concerning arrangements for the Congress to be held in London during the autumn of next year. It was stated that previous meetings had been held at Brussels, Paris, Turin, Genoa, The Hague, and Vienna, the last having been attended by over 2000 hygienists and statisticians from all parts of Europe and America. The Lord Mayor decided on convening a public meeting at the Mansion House for Thursday, April 24th.

SELF-PRESERVATION AND EPIDEMIC DISEASES.

AMONG recent contributions to the cause of sanitary reform an address to the working-classes by Dr. J. F. J. Sykes on "Self-preservation and Epidemic Diseases" deserves favourable mention. The author does not indeed record any new discoveries of science or facts of applied skill as bearing upon the subject under treatment. His paper, on the contrary, is written, as its dedicatory title suggests, in a popular form, but it serves a useful purpose nevertheless. After a brief reference to the characters of in-

fectious disease, he passes on to consider some of the chief difficulties which in time past have prevented its rational treatment. The obscurity of its cause, the species of fatalism which regards various diseases as the natural barriers of early life, and the individualism which prefers a pernicious liberty to the needful control imposed by laws of health, are specially noticed. A policy of indifference in such matters on the part of the State is shown to be clearly incompatible with public safety. Something like paternal legislation is therefore called for, no less on grounds of material economy than of common humanity. In espousing this line of argument the paper before us does useful service to the public generally, and represents a form of instruction in medical principles which can result in good only. It satisfactorily establishes its author's contention that self-preservation such as he advocates implies the fullest regard for our neighbours' welfare.

THE COURSE OF THE AFFERENT FIBRES FOR TASTE.

A CASE has recently been published by Ziehl in *Virchow's Archiv* which, on the whole, supports the view that the fibres conveying gustatory impressions from the anterior two-thirds of the tongue reach the brain through the fifth nerve, and not through the facial. The patient was a man thirty-six years old, otherwise healthy, who found on waking one morning that he had lost sensation in the left side of the chin and of the tongue, and had also lost taste on that side of the tongue. When he came under observation some weeks later there was complete motor and sensory paralysis of the parts supplied by the inferior division of the fifth nerve. The muscles were wasted, and had lost faradaic excitability, and there was complete anæsthesia of the cutaneous distribution of the branches of the nerve, of the inside of the cheek, gums, palate, and of the tongue. The other branches of the fifth nerve were quite normal. The ears were perfectly healthy, and there was no affection of the facial nerve. Taste was completely abolished for electrical and all other stimuli on the anterior two-thirds of the tongue on the left side. After treatment for several months the motor and sensory paralysis gradually passed off, and as the muscles regained power and common sensibility returned, taste also was restored. This clinical observation is in agreement with many others that have been made in this country and elsewhere. While there is no doubt that gustatory impressions pass from the tongue by the chorda tympani to the facial nerve, it is almost certain that they do not reach the brain by that channel. The most probable explanation is that the fibres pass from the facial by the Vidian nerve to Meckel's ganglion and ascend by the second division of the fifth nerve to the brain. In this case there was no evidence of any affection of the second division, but, remembering how close to the third division the Vidian nerve passes, it is quite conceivable that it might be involved in a lesion affecting the larger nerve.

THE VENTILATION OF THE LAW COURTS.

THE problem of ventilating a large building such as the Law Courts is one that presents many difficulties, and it would have been matter for great congratulation if these had been successfully surmounted. As a matter of fact they have been only very ineffectively attacked. The subject, indeed, is one that is very little understood—that is to say, it has been very inadequately discussed in technical circles; and the results, such as they are, of technical discussion are almost absolutely unknown to the general public and to those classes of the population upon whom the custody of our great buildings chiefly devolves. Its size and the complexity of its parts considered, the building in the Strand should be a comparatively easy one to ventilate, for the simple reason that there is abundant space for the necessary machinery and no lack of attendance in the various departments, so that the necessary work can be organised with the greatest facility. In spite of all this, the result actually attained is very disappointing. All *habitués* of the building concur in describing its ventilation as being faulty in a marked degree. Mr. Baron Huddleston has been the latest complainant. He said a few days since that, although a thermometer at his side registered over 70°, a current of icy air was at the same moment playing about his feet. His complaint was promptly re-echoed from the bar, and even those whose visits to the Court have only been occasional will be well prepared to believe that the facts justified the comment made. This is a condition of things which calls loudly for amendment, and we trust that, in the interest of all concerned, and not less of the jurors and the suitors than of the Bench and the bar, who have some sort of monopoly of the privilege of articulate complaint in the matter, such measures will be promptly taken to improve the ventilation of the various Courts as may be possible. If necessary, it surely should not be impossible or even difficult to form a committee of scientific men who could thoroughly investigate the source of the mischief and prescribe a remedy.

THE INFLUENCE OF COLD IN PNEUMONIC INFECTION.

DR. G. LIPARI of Palermo in his recent experiments on the infectious nature of fibrinous pneumonia, essentially confirms what is known of Fraenkel's pneumonococcus, and has also succeeded in proving the influence of cold as a factor in the origin of fibrinous pneumonia. The endo-tracheal injection of pneumonic sputa or pleuritic exudation of animals which had died from pneumonococci gave a negative result, but when the author, before or after the endo-tracheal injection, exposed the animals to cold, the result was very different. Of eight animals so treated six died with clearly established pneumonic infiltration. The author supposes that the cold paralyses the ciliated epithelium of the bronchi, and at the same time causes their mucous membrane to swell, both of which pathological processes favour the descent of the infectious material into the alveoli. These experiments were doubtless undertaken with a view to harmonise the old and new teaching upon the origin of this prevalent disease.

THE DANGERS ATTENDING THE USE OF PARAFFIN LAMPS.

EXPLOSION is evidently not the only possible source of danger that attends the use of a common petroleum lamp. At a coroner's inquest held in East London on the 10th inst., it was found that the death of an infant was caused by inhalation of the noxious products due to faulty combustion of a common paraffin lamp. It appears that the lamp, the chimney of which was patched in places with paper, was allowed to burn all night in the room where a mother and her child were sleeping. She awoke next morning and found the child dead beside her and the room full of acrid smoke. The atmosphere was, in fact, so foul that the medical man who was summoned could not remain long in the room. The post-mortem examination showed that death was the result of asphyxiation. It is difficult to understand why a paraffin lamp should have been used for such a purpose when common night-lights are not only cheap and convenient, but absolutely free from the possibility of an accident, either as the result of explosion or of imperfect burning. Petroleum lamps invariably require careful attention, the

wicks must be trimmed and adjusted properly from time to time, the chimney must have no fault, and the oil supply must be maintained. If these conditions are not complied with, then very injurious gaseous products may escape into and vitiate the surrounding air. The burning of oil through the agency of wicks may be regarded as a kind of distillation. The hydrocarbon oil is converted into vapour, which then burns, if combustion is perfect, into carbonic acid gas and water. If combustion is not perfect, then such well-known poisonous products as carbonic oxide and acetylene, together with unburnt carbon, are obtained. Nothing can be said against the use of lamps in these days of cheap oil, for they are now constructed on the most approved principles, securing perfect combustion and non-liability to explosion, whilst giving at the same time the maximum intensity of light. But on no plea whatever should they be used in the place of night-lights, or disastrous consequences may follow.

STATE MEDICINE IN ITALY.

IMPORTANT innovations have just taken effect in Italy for the official surveillance and control of medical institutions and health resorts. Every prefect throughout the Peninsula has received from Government a circular in which he is authorised to permit the opening of any medico-chirurgical infirmary, maternity hospital, or hydropathic or thermal establishment, only on condition that his sanction has first been asked and obtained. The object of Government in enforcing this regulation is to secure a guarantee in which the public can have confidence that these institutions, whether already established or recently set on foot, correspond exactly to their avowed purpose and are justly chargeable with no defect in their hygienic condition or administration. Another salutary innovation is the practical examination and certifying of professed midwives in town and country. In any centre of population, rural or urban, in which these functionaries are found inadequate, in point of qualification or of number, to the service of the community, the Government shall at once through the local sanitary authority take steps to make good the defect.

THE SOUTH DEVON AND EAST CORNWALL HOSPITAL AND THE MEDICAL STAFF.

Apropos of the discussion now going on at the German Hospital, we are glad to observe that the committee of the Plymouth Hospital have set an example which may well be followed. Hitherto the medical staff has had no status on the committee, the physician and surgeon of the week attending the weekly committee, and having a right, by courtesy only, to vote on those occasions. This year the whole five members of the staff have been placed on the committee, and we have little doubt that the hospital will reap the benefit of this wise concession.

ANOTHER MEAT PROSECUTION.

IT was from no lack of indirect evidence that the stroke of justice missed its mark somewhat in a disgraceful case of fraud lately brought to light at the Central Meat Market. The attention of a market inspector having been directed to one of the stalls, he found there the flesh of a pig clearly unfit for food—sodden, inflamed, and evidently dead from disease. It was seized, examined by the medical officer of health, and condemned. The evidence tendered showed that the animal, which had belonged to a country labourer, had died, but was afterwards stuck in the usual way by a local butcher, who, after cutting away certain parts, forwarded the rest to London. The amount of disease during life may be imagined from the condition of this relatively choice remainder when confiscated, and most persons will agree with Alderman Phillips, who gave judgment in this case, that, while the penalty fell exclusively upon the original owner, the butcher who stuck the animal, and who knew at least that he did not kill it, was even more blameworthy in the matter. Yet he was not legally liable to more than a reprimand. It is not remarkable that a labourer should be comparatively unskilled in judging the quality of meat living or dead, but no such excuse can be brought forward in defence of technical experts. It is clear, therefore, that in dealing with deception of this kind the law has proved to be dangerously incompetent. Such an amendment as will secure the conviction of any and all who may be involved in so injurious an imposture is indispensable to public safety. Meanwhile the fact that such cases do occur, and perhaps not rarely, may serve to stimulate yet more the energy happily displayed by the inspector on the present occasion.

A USEFUL ISOLATION HOSPITAL.

DR. H. J. ALFORD has now for nine consecutive years reported on the use and benefits of the isolation hospital jointly used by the Taunton urban and rural sanitary districts. It has again, during the past year, been of great service in checking the spread of epidemic disease; indeed, concurrently with the isolation resorted to, there has been a marked diminution in the amount of infectious diseases in the two sanitary districts concerned. Since its opening in July, 1879, there have been under isolation no less than 774 patients who would otherwise have been left in their homes, to the detriment of and risk to public health. The cost during the past year has, including all incidental items, somewhat exceeded £309, a sum which has often been wasted in tardy and ineffectual attempts to stamp out a prevalence of infectious disease, and which would form only a small proportion of the total loss which many districts have incurred owing to panic, long maintained support of widows and orphans, and injury to trade which such occurrences of disease often occasion.

MEDICAL EXAMINATIONS OF SUSPECTED PERSONS.

MR. F. W. LOWNDES contributes a paper to the current number of the *Liverpool Medico-Chirurgical Journal* which deserves to be carefully studied by every member of the profession. His experience as surgeon to the Liverpool police gives him authority for the warning he addresses to medical men with regard to examinations of suspected persons—e.g., of women suspected of recent delivery, and concealment of birth or child murder, of domestic servants whose mistresses suspect them of being pregnant, and of males in custody for alleged indecent assaults. He shows clearly that such examinations are illegal without the consent of the party examined, supporting his position by reference to cases that have been made actionable with disastrous results to the medical man, and citing the case of an unfortunate lady who, accused of child murder, committed suicide rather than submit to the examination by two medical men who had been furnished with a coroner's order for that purpose. In that case he refers to the action then (1871) taken by THE LANCET in obtaining a distinct legal opinion that a "coroner issuing such an order and the medical man acting under it would alike be liable to heavy damages in an action." More than this, a female in custody cannot be examined, even on a magisterial order, without her full consent, as in the case of Agnew *v.* Jobson, in which Mr. Justice Lopes clearly laid it down that "neither magistrates, nor policemen, nor medical

men may infringe on the rights of any person." A particularly instructive case is quoted of a kind only too likely to occur in the practice of any medical man, where a maid servant is accused of being pregnant, and her mistress calls in a doctor to confirm her suspicion. The case given led to lengthy litigation, which might, as Mr. Lowndes points out, have been all avoided had the girl's consent to the examination been obtained. His dictum is: "Never examine any female under any circumstances without having first obtained her consent in the presence of one or more reliable witnesses, and, if possible, in conjunction with some other practitioner;" and if this golden rule were always borne in mind, much trouble and loss would be saved to medical men, who err through ignorance of the law, and especially of the fact that not even a magisterial order will justify the examination without consent of the person examined. Precisely the same remark applies to the examination of the male, as in cases of alleged rape or indecent assault; and perhaps it may be helpful to young practitioners to give Mr. Lowndes' rule of action in such cases. He says:—"I have not only always made it a rule to obtain their free consent, but I have also added this caution—'The result of the examination may be in your favour, it may be against you; in either case, I shall be obliged to tell the truth. Do you still consent?'"

CAMBRIDGE UNIVERSITY NATURAL SCIENCE CLUB.

A VERY successful conversazione of the above club, which was founded by distinguished Cambridge men in their undergraduate days, was held on Tuesday last in the lodge of the Master of Downing (Dr. Alex. Hill). This gathering, the first of its kind, we believe, ever held in Cambridge, was of so interesting a character that we shall take an opportunity next week of giving a more extended notice of it.

GLYCOGEN IN THE CEREBRAL CORTEX IN DIABETES.

DR. FUTTERER has examined various organs of a diabetic person, finding glycogen in the medulla oblongata, spinal cord, and kidney in large quantities, and a little in the liver. A careful examination of the cerebral cortex showed that the vessels were full of glycogen. He concluded that extensive disturbances of nutrition were bound to result from this, but he is not sure if the occasional absence of the peripheral layers of cortical nerve fibres is a direct consequence of these disturbances. A large number of hyaline corpuscles was also found in the cerebral cortex and in some parts of the medullary substance of the brain. In places, where these corpuscles were collected in considerable numbers, there was marked atrophy of the nervous elements.

FOREIGN UNIVERSITY INTELLIGENCE.

Amiens.—Dr. Moulonguet has been promoted to the Professorship of External Pathology and Operative Medicine, and Dr. Peugniez to that of Clinical Surgery.

St. Petersburg (Military Medical Academy).—Dr. Tarchanoff, professor of physiology, has been appointed Secretary of the Academy. Dr. Delizyn has been recognised as *privat-docent* in Anatomy.

Warsaw.—Professor Tumas has been appointed to the chair of Special Medical Pathology.

Wurzburg.—The private lecturer, Dr. Wilhelm Kirchner, a pupil of the late Professor Freiherr von Troltsch, has been appointed to succeed him in the chair of Otiatrics in the University of Wurzburg.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—

Professor F. J. Ried, in his eighty-first year, formerly Professor of Surgery in the University of Jena.—Dr. Herbert, late Professor of Clinical Surgery in Amiens.—Dr. Voigt, formerly Professor of Anatomy in Vienna.

MR. R. M. TALBOT, Medical Officer of Health for Bow and Bromley, has presented a report on influenza in East London to the Poplar District Board of Works. He has made inquiries as to how different works were affected by the epidemic, and the following is the percentage of cases. In nitro-benzoline and in varnish works, 1 in 4; in bagging works, 2 in every 9; in breweries, 1 in 5; in sulphate of ammonia works, 1 in every 6; waterproofers and lamp-black makers, 1 in 7; nitric acid works, 1 in 9; jam makers, 1 in 9; gas works, 1 in 11·5; colour works, 1 in 13; paper hanging makers, 1 in 14, saw mills and printers, 1 in 15; engineers, 1 in 17; sulphuric acid works, 1 in 18; flour mills, 1 in 20.

ONE of those singular malformations described as "parasitic fœtus" has been attracting some attention at Demerara. A coolie was admitted into the Colonial Hospital suffering from a tumour in the right loin. The man died, and at the post-mortem examination the "tumour" proved to be possessed of a cranium, with hair attached, an imperfect nose and mouth, no hands or feet, but the rudiments of male genitals. The subject of this "autosite" was thirty-two years of age.

THE Committee on the Extension of the Examination Hall Buildings have reported in favour of lighting the buildings with electricity, of which the installation is estimated to cost £1047 9s. The experience of the gaslights in use in the Examination Hall is stated not to have been satisfactory. The Committee also recommend the construction of passages to the new lifts, and the desirability of placing tanks in the basement for the storage of subjects.

THE annual meeting of the Royal Medical and Chirurgical Society will be held at the Society's house, 20, Hanover-square, on Saturday, March 1st, 1890, at 8.30 P.M. The Council will submit its annual report, and the President, Sir Edward Sieveking, M.D., LL.D., will deliver his address. The new hall will be used for the first time on this occasion, and the rooms will be lighted by the electric light and be open for the inspection of the Fellows.

THE Belgian Parliament has decided to admit females to the full practice of medicine and pharmacy, but to exclude them from the legal profession. It has voted on the university question in opposition to the wishes of the medical profession, making the entry into the university a very simple matter, and refusing to institute State examinations for the licence to practise.

ALTHOUGH the influenza is nearly, if not quite, gone from the metropolis, it is still very prevalent in country districts, especially in Cambridgeshire, and also in Somerset and Devon.

PROFESSOR G. F. YEO has resigned the Chair of Physiology in King's College, London, and has been appointed Emeritus Professor.

THE HYDERABAD CHLOROFORM COMMISSIONS.

IN the report of the Second Hyderabad Chloroform Commission, which appeared in THE LANCET of Jan. 18th last, an account was given of the reasons which induced Surgeon-Major Lawrie to apply for a Commission to investigate the action of chloroform, and led to the appointment, at his request, of the First Chloroform Commission in 1888. The report of this Commission, as mentioned in Clause 7 of the Report of the Second Commission, is republished as Appendix A to that report. We now reprint it in THE LANCET, as it contains the experimental data on which Surgeon-Major Lawrie founded the remarks on which we commented in THE LANCET of March 2nd, 1889. Our comments ultimately led to the appointment of the Second Commission, to which Dr. Lauder Brunton went as our representative; and the first part of the work of the Second Commission consisted in repeating and extending the experiments of the first. The reports of both Commissions, therefore, form parts of a single research, and the experiments in the first report, being of a simpler kind, form an excellent introduction to the work of the Second Commission, which we shall publish in future numbers of THE LANCET.

APPENDIX A

TO THE

REPORT OF THE SECOND HYDERABAD CHLOROFORM COMMISSION.

THE REPORT OF THE FIRST HYDERABAD CHLOROFORM COMMISSION.

From Surgeon P. Hehir, M.D., F.R.C.S. Ed., President, Hyderabad Chloroform Commission, Hyderabad, to Surgeon-Major E. Lawrie, M.D., Principal, Hyderabad Medical School, Hyderabad.

IN accordance with the directions contained in your letter No. 141-A of Jan. 18th, 1888, I have the honour to state that the Chloroform Commission appointed by his Highness the Nizam's Government carried out 141 experiments on the effects of chloroform on dogs, and to submit the attached report with its appendices as the result of their researches.

(Signed) P. HEHIR, F.R.C.S. Ed.,
Hyderabad Chloroform Commission, Hyderabad.

REPORT.

1. At the recommendation of Surgeon-Major E. Lawrie, M.B., Indian Medical Service, Residency Surgeon, and Principal of the Hyderabad Medical School, his Highness the Nizam's Government appointed a Commission, consisting of a President and two members, to make a series of investigations in connexion with the effects of chloroform on dogs.

2. The following report by the Commission embodies the results of the experiments undertaken.

3. The experiments were commenced on Feb. 8th, 1888, and conducted from 11 A.M. to 3 P.M. daily in the verandah of the private ward of the Residency Hospital.

4. In this report the Commission have incorporated in detail the experiments performed upon 141 dogs with chloroform vapour by inhalation. This number, however, does not embrace all the experiments carried out, for many dogs were anæsthetised twice, and a few three or more times.

5. The Commission were not influenced in their investigations by experiments carried out previously by other observers.

6. It was decided to ascertain the influence of chloroform vapour on the circulation and respiration, and inquiries were mainly directed to the discovery of the exact relationship that exists in the dog, in point of time between the cessation of the respiration and of the heart's action.

7. A further object was to find out to what extent the heart is affected, primarily or secondarily, in poisoning by the inhalation of chloroform vapour. The Commission consider that the data collected definitely settle these questions. In no experiments hitherto performed, as far as can be ascertained from such English medical journals, reports, and text-books as are accessible, has the relation of the respiration to circulation during chloroform anæsthesia of animals been specially attended to, although the influence of the former on the latter is casually mentioned in several reports and medical periodicals.

8. The experiments were divided into the following four series, in which the dogs were:—

(I.) Anæsthetised until death took place—eight experiments recorded;

(II.) Chloroformed with large doses of the drug, and the effects of artificial respiration noted—in this series seventy-five experiments are recorded;

(III.) Gradually anæsthetised with drachm doses of chloroform, with and without artificial respiration—seventeen experiments recorded; and

(IV.) Poisoned rapidly with large doses of concentrated chloroform vapour as far as possible without admixture with air—forty-one experiments recorded.

9. In each series the time of the occurrence of the following events were noted: (*a*) commencement of the inhalation; (*b*) when fully under chloroform; (*c*) when respiration ceased; (*d*) when the pulse stopped; (*e*) when artificial respiration was begun; (*f*) when the pulse returned; (*g*) when natural respiration was re-established; and (*h*) when the heart's action ceased.

10. Of the three observers, one confined his attention to the condition of the femoral artery, the second observed the state of the heart's action, and the third watched the respiration and recorded the time. If any doubt existed as to the condition of the pulse, heart, or respiration at any particular moment, a single opinion was not relied on.

12 (*sic*). Of the 141 animals experimented on, 113 were strong, full-grown, healthy pariah dogs and sluts; 25 were well-grown, pariah pups about eight months old; and 3 were healthy mongrel terriers.

13. The weight and size of the dog did not give rise to any noteworthy peculiarities during the administration of chloroform except such as might have been naturally expected; the larger and more powerful the dog, the more pronounced the struggling during the initial stage of the administration; the smaller the dog, the smaller the quantity of chloroform required to produce anæsthesia. The approximate similarity of results indicates that the weight of the animal is not an element that demands any special consideration.

14. The chloroform was administered from a conical cap made of two folds of coarse cotton cloth (*dungaree*), at the bottom of which some cotton-wool was placed. Free admixture of the chloroform vapour with air was allowed in all but those cases in which it was purposely excluded (fourth series), and to effect this latter purpose a layer of mackintosh was tightly stretched outside the inhaler, which was fixed as to exclude the air almost entirely.

15. About half the dogs had been deprived of food for twenty-four hours before being experimented on. The condition of the stomach as to fulness or otherwise was apparently of no consequence, for in no case did actual vomiting ensue, although attempts at retching were made in several instances.

16. Before commencing the administration of the anæsthetic, the animals were muzzled and their fore and hind legs secured to the table. After the first stage of the anæsthesia was induced, directly they got quiet, the muzzle and leg band were removed, so that there was nothing to interfere with the movements of respiration or the circulation.

17. The animal was considered to be completely under chloroform when, with the cessation of the conjunctival reflex, the general muscular system was relaxed. A very small quantity of chloroform, and that at intervals, was then needed to keep up the anæsthetic effect.

18. The purity of the chloroform was guaranteed by using that made by Messrs. Duncan and Flockart, of Edinburgh.

19. We have considered it better to place the groups of experiments separately than to give them collectively; and to make such remarks on them *seriatim* as the facts connected with each appear to warrant. We give the actual tables in the form of appendices, but attach to each series

an abstract showing the mean, maximum, and minimum of time that elapsed between the different events noted.

FIRST SERIES.

Dogs chloroformised till Death.

20. This collection of experiments was undertaken with the view to ascertain the natural sequence of phenomena in the dog poisoned by chloroform vapour.

21. The facts registered showed us what was to be expected in the succeeding series. This group might have been extended, but the comparative uniformity of the results made it unnecessary.

22. The drug was given the same way as it is administered to patients at the Residency and Afzul Gunj Hospitals—i.e., an unmeasured quantity of chloroform was poured into the cloth inhaler, and free admixture with air allowed during inhalation. In this group we pushed the chloroform beyond the stage of complete anæsthesia, and stopped the administration only when respiration had entirely ceased.

The sequence of events was then noted.

The interval of time that elapsed between the different incidents registered in the first series is as follows :—

No.	Nature of observation.	Interval of time.					
		Mean.		Maximum.		Minimum.	
		Min.	Sec.	Min.	Sec.	Min.	Sec.
1	Between cessation of respiration and stoppage of heart's action	3	27·5	5·0	..	1	15·0
2	Between cessation of respiration and stoppage of pulse	1	31·3	3	30·0	..	100
3	Between stoppage of pulse and that of heart's action	1	56·1	3	13·0	..	50·0
4	Between commencement of inhalation and cessation of respiration	7	6·1	16	30·0	1	5·0

These events are in what is considered to be the order of their practical importance. The average interval of time between the cessation of the respiration and that of the heart's action is, however, by far the most significant, and amounted to nearly three minutes and a half.

It was found that each animal passed through three stages : 1. A stage of excitement during which there was a temporary exaltation of the functions of the cerebrum and of the circulation; in powerful animals there was much struggling, and in all the blood pressure was raised. 2. These phenomena were followed by a partial relaxation of the voluntary muscular system, and a gradual lowering of the force and decrease in the volume of the pulse. The respirations were now more regular and tranquil. 3. This passed rapidly into the third stage, in which there were cessation of reflex action, of complete muscular relaxation, and complete anæsthesia.

23. The effects of chloroform vapour on the dog appear to be, primarily, those of a stimulant on the cortical part of the cerebrum, bringing about a discharge of motor impulses represented by struggling—partly voluntary and partly involuntary. As the blood becomes more charged with the vapour an impairment of voluntary muscular power takes place; the functions of the cells of the motor centres are then materially impaired. At this stage reflex action is still possible, for the spinal cord has not been to a similar degree affected by the chloroform. The cord it eventually involved, and then the only remaining manifestations of vitality are the action of the heart and of the respiratory muscles.

It was exceedingly interesting to observe the variations in the characters of the pulse and heart's action during the several stages of chloroform administration.

24. In the pulse there was primarily a slight and temporary increase in frequency and volume immediately after commencing the inhalation, followed by a decrease in volume and in blood pressure, but no alteration in frequency. In the stage of complete anæsthesia the arteries relaxed, and the number of beats decreased. In the second group of experiments (those of slow poisoning) the pulse in some cases became intermittent shortly after the cessation of respiration, and in the fourth series (rapid poisoning with exclusion of air), the pulse in several cases returned for a few beats after being absent for some seconds.

25. Although a gradual loss of tension in the arteries took place after the first stage, the ratio decrease of tension was more abrupt when the respiration became affected, the slowing of the respiration was always succeeded by a sudden increase in the relaxation in the coats of the femoral artery and a fall of tension.

26. With regard to the heart's action it was observed that a transient stimulation of its force and increase of its frequency during the stage of excitement were speedily succeeded by a gradual decrease of the force of the systolic contraction of the ventricles. The first sound now appeared prolonged (as if the ventricles took a longer period to contract), and after the cessation of the respiration it soon became muffled. The intervals between the beats became longer. This was the moment chosen, as a rule, for artificial respiration in the three succeeding groups of experiments.

27. In this series, just as the heart was about to cease acting its frequency would become markedly increased (so rapid, indeed, as to be uncountable), and then it would cease contracting. In a number of the second collection of experiments intermission of the heart's action took place after cessation of respiration.

These were the main features observed in connexion with the circulatory apparatus. Others of minor importance were exceptionally manifested.

28. In some of the eight cases of this group, and in many of those in the following series, so rapidly was the anæsthesia induced that the second stage was absent entirely, the animal appearing to pass directly from struggling to complete anæsthesia.

29. In these eight cases, and in most of those of the other groups, we noticed complete dilatation of the pupils during the last stages of anæsthesia. This total mydriasis is an indication of approaching cessation of respiration, and consequently may be a point deserving of some attention during the chloroforming of dogs.

30. Roughly, we found the succession of phenomena to be (1) partial loss of sensation with slightly increased reflex irritability, followed by (2) complete loss of sensation and of reflex action; (3) cessation of respiration; (4) absence of pulse of femoral artery; and finally (5) stoppage of heart's action.

31. Although the intervals of time between the occurrence of these events varied within wide limits in different cases, in no instance was the sequence modified.

The heart's action never became dangerously affected or stopped until after cessation of respiration.

SECOND SERIES.

ARTIFICIAL RESPIRATION AFTER ARREST OF COMPLETE ANÆSTHESIA.

32. In this collection of experiments anæsthesia was brought about by large doses of chloroform. Artificial respiration was tried in various stages of the anæsthesia, and in addition to the events given in the preceding class of experiments, the length of time it took to produce insensibility was noted.

The intervals of time that elapsed between the several events are as follows :—

No.	Nature of observation.	Interval of time.					
		Mean.		Maximum.		Minimum.	
		Min.	Sec.	Min.	Sec.	Min.	Sec.
1	Between the commencement of the inhalation and the stage of complete anæsthesia	2	5·5	8	..	..	40·0
2	Between stoppage of respiration and pulse	..	47·90	6	15·0	..	5·0
3	Between stage of complete anæsthesia and cessation of respiration	4	45·3	13	10	..	20·0
4	Between stoppage of pulse and heart	3	0·5	13	26	..	13
5	Between cessation of respiration and stoppage of heart's action	3	47·5	13	40·0	..	45·0
6	Between cessation of respiration and commencement of artificial respiration	1	34·25	9	40	..	5
7	Between commencement of artificial respiration and return of pulse ..	2	12·3	6	10·0	..	10·0

In the above abstract the points deserving of special attention appear to be :—

(1) The rapidity with which dogs are completely anæsthetised with chloroform—an average of a little more than two minutes.

(2) The fact that the pulse went on beating for about three-quarters of a minute after the respiration ceased, and in one case for 6½ minutes.

(3) That the heart went on beating for three (and in one case for 13⅝⅝) minutes after the pulse had ceased to be felt.

(4) That the heart continued to act for 3⅛⅞ (and in one case for 13⅛⅝) minutes after the breathing had stopped.

(5) The average time allowed to elapse before commencing artificial respiration (after the breathing had ceased) was about a minute and a half.

33. In thirty-seven experiments of this group artificial respiration was commenced on an average fifty-two seconds after complete cessation of respiration. All the animals were resuscitated.

34. In forty-six experiments artificial respiration was begun immediately after the pulse could no longer be felt; in twenty-nine it was successful; in seventeen it failed.

35. In twenty-one cases artificial respiration was commenced after the heart's action had ceased; in all it proved unsuccessful.

36. It is generally recognised and taught that in the chloroforming of human beings the greatest danger arises during the initial stage from either cardiac syncope, due to the drug acting on the inter-cardiac nervous ganglia, from reflex inhibition of the heart's action brought about by irritation of the terminations of the sensory or afferent nerves in some part of the respiratory passages, or from "shock" during the performance of some operation. The Commission have endeavoured to ascertain how far these views could be substantiated in the chloroform anæsthesia of dogs.

The following are the deductions made:—

(1) In no case did arrest of cardiac action from syncope take place during the first stage—nor indeed in any other stage.

(2) In no case was there reflex inhibition of the heart's action in this or in any other stage.

(3) The inhalation of chloroform vapour, no matter in what doses or in what manner carried out, cannot kill a dog by acting directly upon its heart. We must invariably affect the nervous mechanism of respiration before involving the cardiac centres of the medulla oblongata or affecting the contractions of the ventricles and auricles to any extent.

(4) The Commission further consider that chloroform vapour administered to dogs never kills by acting on the intra-cardiac ganglia either primarily or secondarily. It is impossible to produce syncope from chloroform in dogs.

37. One noteworthy fact observed in this series is that in those cases in which the respiratory process was gradually extinguished the pulse became imperceptible with unusual rapidity after the breathing ceased, and in such cases it required more prolonged artificial respiration to revive the animal. This contrasts with what was found to be the case with the dogs of the fourth series, in which it was found that the larger the dose of the chloroform administered, the more rapidly is the anæsthesia produced; the longer the pulse was felt to beat after cessation of respiration, and the less the difficulty in re-establishing the respiration by artificial means.

38. In some instances, so gradual was the cessation of the action of the respiratory muscles that it was not easy to distinguish the precise moment at which respiration stopped.

39. In this group of experiments the influence of the respiratory process on the circulation became markedly apparent when the former ceased. The failure in the volume of the pulse in the later stages of slow poisoning was almost in exact proportion to the failure of the respiratory function.

40. The Commission are of opinion that in the dog the danger to life from chloroform inhalation arises only when the cells of the respiratory centres (both respiratory and expiratory) of the medulla oblongata have their functions interfered with.

41. So long as respiration is going on uninterruptedly, the chloroform vapour is rapidly given off in the expired air. Disturbance of this eliminative process, as manifested by shallow, jerky, or irregular breathing, forms the only dangerous phenomenon to be encountered in the chloroformisation of dogs.

42. The main practical point brought out by this series of experiments is that the strictest attention must be paid to the respiration throughout. So long as the respiration was watched and advantage taken of the moment it ceased to perform artificial respiration, no danger arose. Further, alternate chloroformisation till the complete stoppage of respiration and re-establishment of respiration by artificial means might have been repeated on the same animal as often as we wished without the least risk to life.

43. The manner in which the animals respired during the inhalation affected, to some degree, the rapidity of the onset of the anæsthesia. This is well shown in the difference in the length of time it took to get some of the dogs (in all physical conditions identical) completely under the influence of the drug.

44. It was observed that irregular sighing, or shallow respiration, was in this series an indication for removal of the inhaler.

45. Stertor is not an indication of incipient respiratory difficulty in dogs.

46. Mechanical asphyxia from falling back of the tongue occurred in several cases during complete anæsthesia. It was readily remedied by opening the dog's mouth widely and drawing out the tongue.

47. In a number of cases there was frothing at the mouth.

48. In many of these experiments it was noticed that the return to consciousness was extremely rapid. Some dogs became sensible within two minutes.

49. This appears to indicate a speedy elimination of the drug. In most cases in which return to consciousness was permitted, the period of somnolence was very brief. It may be inferred from this that no great structural, metabolic, or chemical change can occur in the protoplasm of the grey cells of the central cortex during the anæsthesia. Probably no material, or at least appreciable, alteration does occur. The effects of chloroform appear to be such as would bring about a temporary abrogation of the physiological functions of the cells of the higher nerve centres.

50. During the stage of excitement in many cases there was relaxation of the sphincters of the bladder and anus, resulting in micturition and defecation. More rarely there was erection of the penis and seminal discharge.

51. Towards the end of the stage of struggling, in several instances we noticed that chronic spasms occurred in the extremities. They were very evanescent.

52. When any animal rigidity of the abdominal muscles appeared (this phenomenon being almost exclusively confined to the first stage) a few sharp slaps with the open hand was sufficient to re-excite respiration. It was further observed that struggling demanded that the chloroform be pushed and not withheld.

THIRD SERIES.

DOGS GRADUALLY ANÆSTHETISED WITH CHLOROFORM.

53. In the seventeen cases recorded in this group the anæsthetic was used in drachm doses. As will be seen from the figures given below, it took longer to render the animals insensible with those smaller doses. The average maxima and minima of time that lapsed between the several events that were registered are as follows:—

No.	Nature of observation.	Interval of time.					
		Mean.		Maximum.		Minimum.	
		Min.	Sec.	Min	Sec.	Min.	Sec.
1	Between the commencement of inhalation and complete anæsthesia ..	2	34·25	5	10·0	..	37·0
2	Between complete anæsthesia and stoppage of respiration	6	59·12	13	27·0	1	5
3	Between cessation of respiration and stoppage of pulse	..	47·5	3	21·0	..	8·0
4	Between stoppage of pulse and beating of heart ..	2	16·5	4	48	..	35

These results are, on the whole, identical with those given in the preceding groups of experiments. The only noteworthy difference is in the rapidity with which the heart ceases to beat in very slow chloroformisation (two minutes and a quarter) as compared with anæsthesia more rapidly induced.

54. Artificial respiration was tried in five of these experiments when the heart's sounds were barely audible, and had almost stopped. In one case the animal revived.

55. In this series when the breathing had become shallow and less frequent a few whiffs of the chloroform were sufficient to cause its entire cessation.

FOURTH SERIES.

DOGS RAPIDLY ANÆSTHETISED WITH CHLOROFORM VAPOUR WITHOUT ADMIXTURE WITH AIR.

56. In the 41 cases enumerated in Appendix IV. the animals were poisoned with large doses of chloroform,

while special precautions were taken to prevent admixture of the vapour with air.

The intervals of time between the different events noted were as under :—

No.	Nature of observation.	Interval of time.					
		Mean.		Maximum.		Minimum.	
		Min.	Sec.	Min.	Sec.	Min.	Sec.
1	Between commencement of inhalation and complete anæsthesia	1	15·8	2	57	..	26
2	Between complete anæsthesia and cessation of respiration	2	11·33	9	28	..	10
3	Between stoppage of respiration and pulse ..	1	0·6	7	52	..	5
4	Between stoppage of pulse and heart's action.. ..	2	33·6	7	1	..	53

The points deserving of notice here are :—(1) the rapidity with which anæsthesia is produced with large doses of chloroform, the average time being one minute and a quarter, and (2) the fact that the cardiac action is less hampered than in anæsthesia produced gradually.

57. Artificial respiration was tried in one of these cases, and proved successful, when the pulse had ceased for twenty-eight seconds.

58. In sixteen cases, before the inhalation was begun, one drachm to two drachms of rum were administered. The stimulant produced no appreciable result.

59. In three cases after respiration had ceased, faradaic electricity was used to re-establish respiration. It proved unsuccessful in all.

60. The experiments recorded lead the Commission to consider that dogs are very susceptible to anæsthesia by chloroform vapour. Insensibility is rapidly induced, and these animals are easily killed by chloroform. The susceptibility varied somewhat with the size of the animal. In strong and healthy dogs, however, the results were comparatively uniform, although the differences between the maxima and minima of certain events might lead to the opposite conclusion.

The main point in the chloroforming of dogs is to watch the breathing. In all cases where artificial respiration was begun immediately the natural respiration ceased the animal recovered.

Artificial respiration is useless in the vast majority of cases if respiration has ceased for more than fifty seconds, and even after fifty seconds it is not invariably successful.

The animals could be revived in almost every case if not more than thirty seconds had elapsed after cessation of natural breathing.

In no case was artificial respiration of use after the heart had ceased to beat, and in only one case was it successful when the heart's sounds were barely audible.

Rapid induction of anæsthesia is succeeded by rapid elimination of the chloroform.

There is very little tendency to a cumulative effect of the chloroform as long as the process of respiration is not interfered with. Such an effect is, however, distinctly marked when the quantity of air leaving the lungs is materially decreased.

The more concentrated the vapour the more rapid the anæsthesia, and (unless an over-dose be given, which would interfere with the functions of the respiratory centre, and therefore with the elimination of the chloroform) the more rapidly is the return to consciousness re-established. In no case did the heart cease acting before the respiratory muscles. In no case during the anæsthesia did the irritation of the vapour on the terminal fibres of the afferent nerves of the nasal, pharyngeal, laryngeal, or pulmonary mucous surfaces or impulses from any other afferent nerves produce anything simulating reflex inhibition of the heart's action.

In no case did cardiac syncope occur. The Commission consider that it is impossible for chloroform vapour to kill a dog by acting primarily on the heart, and this holds good no matter in what doses or in what manner the poisoning is induced.

It is the opinion of the Commission that death from chloroform narcosis in dogs is absolutely avoidable, and ought never to occur from surcharging of the blood with chloroform. Once anæsthesia is induced, so long as the respiration is kept up, there is no fear of a cumulative effect—the drug is rapidly eliminated. Interference with this elimination brings about changes in the respiratory mechanism which ought to arouse suspicion and prepare us for artificial respiration.

For convenience of reference we give the subjoined table of the intervals of time that elapsed between the principal events noted :—

Combined Table of Intervals of Time between the different events registered in all four Series.

Number.	Nature of observation.	Intervals of time.																					
		1st Series. $CHCl_3$ administered in ordinary way.						2nd Series. Slow poisoning.						3rd Series. Slow poisoning with drachm doses.						4th Series. Rapid poisoning.					
		Mean.		Maximum.		Minimum.		Mean.		Maximum.		Minimum.		Mean.		Maximum.		Minimum.		Mean.		Maximum.		Minimum.	
		M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.
1	Between the commencement of the inhalation and the stage of complete anæsthesia	..	..	..	..	..	..	2	55	8	..	..	40·0	2	34·25	5	10·0	..	37·0	1	15·8	2	57	..	26
2	Between stoppage of respiration and of pulse ..	1	31·3	3	30·0	..	10·0	..	47·9	6	15	..	5·0	..	47·5	3	21·0	..	8·0	1	0·6	7	52	..	5·0
3	Between stage of complete anæsthesia and cessation of respiration.	..	..	..	..	..	..	4	45·3	13	10·0	..	20·0	6	59·12	13	27·0	1	5·0	2	11·33	9	28	..	10·0
4	Between stoppage of pulse and of heart	1	56·1	3	13·0	..	50·0	3	0·5	13	26	..	13	2	16·5	4	48	..	35	2	33·6	7	1	..	..
5	Between cessation of respiration and stoppage of heart's action	3	27·5	5·0	..	1	15·0	3	47·5	13	40·0	..	45·0	..	..	..	..	..	..	..	..	..	..	..	..
6	Between cessation of respiration and commencement of artificial respiration..	..	..	..	..	..	..	1	34·25	9	40	..	5	..	..	..	..	..	..	..	..	..	..	..	..
7	Between commencement of artificial respiration and return of pulse ..	..	..	..	..	..	..	2	12·3	6	10·0	..	10·0	..	..	..	..	..	..	..	..	..	..	..	..
8	Between commencement of inhalation and cessation of respiration.. ..	7	6·1	16	30·0	1	5·0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

In conclusion, the Commission would state that many other interesting phenomena might have been brought out on these experiments. Additional observations could have been made, but they would have tended to lessen the value of the special investigations in hand. Any supplementary notes taken at the time would have prevented that concentration of attention which the facts herein accumulated demanded. The nature of the data collected attest that the keenest watchfulness was indispensable throughout; the loss of a few seconds in any particular case would have vitiated the experiment. The Commission would suggest the continuation of the experiments on dogs, but with such modifications as to permit of a more complete comparison between the phenomena of chloroformisation in the dog and in the human being, so that the points of contrast and agreement might be rendered more demonstrable.

PATRICK HEHIR, M.D., F.R.C.S.Ed.
ARTHUR CHAMARETTE, L.M.S.
J. A. KELLY, L.M.S.

SERIES I.—(8 EXPERIMENTS.)

APPENDIX No. I.—*Dogs "chloroformed" till death occurred.*

No. of experiment.	Description of dog.	Inhalation commenced.	Fully under chloroform.	Respiration ceased.	Pulse stopped.	Artificial respiration commenced.	Pulse returned.	Natural respiration re-established.	Heart ceased beating.	Remarks.
		H. M. S.		H. M. S.	H. M. S.				H. M. S.	
1	Full-grown, powerful pariah dog.	11 30 0	No record taken.	11 46 30	11 50 0	Not tried.	..	..	11 51 30	—
2	Pariah pup, slut, six months old.	12 5 0	Do.	12 8 45	12 9 10	Do.	..	..	12 10 0	—
3	Pariah pup, fairly nourished, six months old.	12 20 0	Do.	12 21 5	12 22 5	Do.	..	..	12 25 18	—
4	Full-grown, well-nourished pariah dog.	12 38 0	Do.	12 41 45	12 41 55	Do.	..	..	12 44 17	—
5	Pariah pup, five months old.	12 5[illegible] 0	Do.	1 0 30	1 3 15	Do.	..	..	1 5 10	—
6	Powerful Binjari dog, full-grown.	1 14 0	Do.	1 24 0	1 24 10	Do.	..	..	1 27 4	—
7	Full-grown terrier slut.	2 27 0	Do.	2 37 6	2 38 45	Do.	..	..	2 40 0	—
8	Full-grown, well-nourished terrier slut.	2 45 0	Do.	2 52 8	2 54 40	Do.	..	..	2 56 10	—

SERIES II.—(75 EXPERIMENTS.)

APPENDIX No. II.—*Artificial respiration tried after large doses of chloroform.*

No. of experiment.	Description of dog.	Inhalation commenced.	Fully under chloroform.	Respiration ceased.	Pulse stopped.	Artificial respiration commenced.	Pulse returned.	Natural respiration re-established.	Heart ceased beating.	Remarks.
		H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	
1	Well-nourished, full-grown pariah dog.	12 30 0	No record taken.	12 18 30	12 19 10	12 20 0	12 21 0	12 21 30	..	Artificial respiration successful fifty seconds after stoppage of pulse.
2	Pariah pup, one year old.	12 45 0	Ditto.	12 50 0	12 51 10	12 51 10	..	..	12 52 20	Artificial respiration unsuccessful immediately after stoppage of pulse.
3	Well-nourished, powerful Binjari slut.	1 2 0	Do.	1 5 40	1 6 1	1 6 4	..	..	1 16 0	Artificial respiration unsuccessful three seconds after stoppage of pulse.
4	Full-grown pariah dog.	1 28 0	Do.	1 31 30	1 32 0	1 32 2	..	..	1 35 0	Artificial respiration unsuccessful two seconds after stoppage of pulse.
5	Healthy pariah pup, five months old.	2 14 0	Do.	2 30 30	2 30 45	2 30 45	2 32 0	2 35 40	..	Artificial respiration successful immediately on stoppage of pulse.
6	Well-nourished, full-grown pariah dog.	12 17 0	Do.	12 34 40	12 35 40	12 35 40	..	..	12 37 0	Artificial respiration immediately after stoppage of pulse; unsuccessful.
7	Ditto.	12 48 15	12 51 0	12 52 50	12 53 15	12 53 16	12 56 30	12 56 45	..	Artificial respiration one second after stoppage of pulse; successful.
8	Ditto.	1 2 0	1 3 40	1 7 30	1 8 30	1 8 30	1 9 45	1 10 10	..	Artificial respiration after stoppage of pulse; successful.
9	—	1 12 30	No record taken.	1 15 55	1 16 30	1 18 30	..	..	1 18 25	Artificial respiration after stoppage of heart; unsuccessful.
10	Well-fed, old pariah dog.	1 33 0	1 41 0	1 45 5	1 45 50	1 45 50	..	..	1 47 8	Artificial respiration after stoppage of pulse; unsuccessful.
11	Full-grown, healthy pariah slut.	2 10 0	2 12 30	2 19 50	2 20 45	2 20 45	2 30 40	2 25 30	..	Artificial respiration after stoppage of pulse; successful.
12	—	2 26 0	No record.	2 34 55	2 35 10	2 37 40	..	..	2 37 35	Artificial respiration after stoppage of heart; unsuccessful.
13	Well-fed, full-grown pariah dog.	2 45 0	2 47 15	2 55 10	2 56 0	2 56 0	2 56 15	2 57 20	..	Artificial respiration after stoppage of pulse; unsuccessful.
14	—	2 58 30	No record.	3 4 15	3 5 10	3 7 60	..	..	3 7 60	Artificial respiration after stoppage of heart; unsuccessful.
15	Healthy, full-grown pariah dog.	3 15 0	3 17 30	3 23 30	3 24 10	3 24 10	..	..	3 25 0	Artificial respiration after cessation of pulse; successful.
16	Small-sized pariah dog.	3 38 0	3 40 10	3 48 45	3 49 30	3 49 30	3 53 20	3 54 0	..	Do. do.
17	—	3 55 0	No record.	3 55 40	3 57 0	3 59 10	..	..	3 59 0	Artificial respiration after stoppage of heart; unsuccessful.
18	Well-nourished, full-grown pariah dog.	12 6 0	12 10 45	12 20 0	12 20 45	12 20 45	12 22 10	12 25 30	..	Artificial respiration after stoppage of pulse; successful.
19	—	12 26 30	No record.	12 40 55	12 43 30	12 46 0	..	..	12 45 50	Artificial respiration after stoppage of heart; unsuccessful.
20	Full-grown pariah dog.	12 51 30	12 53 30	1 0 0	1 0 15	1 0 35	1 7 10	1 8 10	..	Artificial respiration after stoppage of pulse; successful.
21	—	1 10 0	No record.	1 16 30	1 16 48	1 19 0	..	..	1 19 0	Artificial respiration after stoppage of heart; unsuccessful.
22	—	1 40 0	1 41 10	1 44 55	1 47 35	1 48 0	1 49 40	1 50 0	..	Artificial respiration after stoppage of pulse; successful.
23	—	1 52 0	No record.	1 58 0	1 58 32	1 59 0	..	..	1 58 45	Artificial respiration after stoppage of heart; unsuccessful.

No. of experiment.	Description of dog.	Inhalation commenced.	Fully under chloroform.	Respiration ceased.	Pulse stopped.	Artificial respiration commenced.	Pulse returned.	Natural respiration re-established.	Heart ceased beating.	Remarks.
		H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	
24	Healthy, full-grown pariah dog.	2 19 30	2 22 10	2 31 30	2 32 0	2 32 10	2 34 30	2 35 0	..	Artificial respiration after stoppage of pulse; successful.
25	—	2 37 40	No record.	2 44 20	2 46 20	2 49 40	..	..	2 49 40	Artificial respiration after stoppage of heart; unsuccessful.
26	Full-grown pariah slut.	2 56 57	2 59 0	3 0 30	3 0 45	3 0 48	3 1 20	3 5 20	..	Artificial respiration after cessation of pulse; successful.
27	Well-nourished pariah pup, four months old.	3 14 20	3 15 40	3 21 0	3 22 45	3 22 50	..	..	3 28 30	Artificial respiration after cessation of pulse; unsuccessful.
28	Pariah pup, three months old.	3 31 0	3 32 0	3 35 20	3 36 0	3 37 0	3 37 10	3 40 45	..	Artificial respiration after cessation of pulse; successful.
29	—	3 41 0	No record.	3 46 10	3 46 45	3 50 0	..	..	3 49 55	Artificial respiration after stoppage of heart; unsuccessful.
30	Fairly nourished pariah pup, four months old.	12 15 30	12 18 30	12 27 45	12 27 48	12 27 50	12 32 15	12 34 55	..	Artificial respiration after stoppage of pulse; successful.
31	—	12 37 30	No record.	12 40 30	12 40 45	12 43 50	..	..	12 43 45	Artificial respiration after stoppage of heart; unsuccessful.
32	Pariah pup, fairly nourished, four months old.	12 50 0	12 51 15	12 52 45	12 53 0	13 53 6	..	..	12 54 45	Artificial respiration after stoppage of pulse; unsuccessful.
33	Healthy, full-grown pariah slut.	1 8 0	1 11 0	1 14 10	..	1 14 20	..	1 16 10	..	Artificial respiration after stoppage of respiration; successful.
34	—	1 17 0	No record.	1 21 45	No record.	1 23 35	..	..	1 23 30	Artificial respiration after stoppage of heart; unsuccessful.
35	Powerful, full-grown pariah dog.	1 25 0	1 26 20	1 39 30	1 40 30	1 40 35	1 42 10	1 45 50	..	Artificial respiration after stoppage of pulse; successful.
36	—	1 48 30	No record.	1 54 30	2 0 45	2 4 10	..	..	2 4 8	Artificial respiration after stoppage of heart; unsuccessful.
37	Full-grown, powerful pariah dog.	1 4 0	1 5 0	1 5 45	1 5 55	1 6 10	1 10 43	1 13 33	..	Artificial respiration after stoppage of pulse; successful.
38	—	1 14 30	No record.	1 23 12	1 23 18	1 25 45	..	..	1 25 42	Artificial respiration after stoppage of heart; unsuccessful.
39	Full-grown, fairly nourished pariah dog.	1 38 0	1 39 58	1 52 30	1 54 13	1 54 15	..	..	1 58 30	Artificial respiration after stoppage of of pulse; unsuccessful.
40	Pariah pup, six months old.	2 36 0	2 38 22	2 41 8	2 41 20	2 41 30	2 44 10	2 45 48	..	Artificial respiration after stoppage of pulse; successful.
41	—	2 47 0	No record.	2 53 43	2 54 10	2 56 10	..	..	2 56 10	Artificial respiration after stoppage of heart; unsuccessful.
42	Pariah pup, eight months old.	3 5 30	3 8 12	3 21 0	..	3 21 5	..	3 23 8	..	Artificial respiration after stoppage of respiration; successful.
43	—	3 24 0	No record.	3 26 12	3 26 18	8 29 0	..	..	3 28 18	Artificial respiration after stoppage of heart; unsuccessful.
44	Full-grown pariah slut, well-nourished	11 40 0	11 42 55	11 46 25	11 47 33	11 47 35	11 48 12	11 50 10	..	Artificial respiration after stoppage of pulse; successful.
45	—	11 53 45	No record.	11 57 18	11 57 25	12 1 10	..	..	12 1 8	Artificial respiration after stoppage of heart; unsuccessful.
46	Powerful, full-grown pariah dog.	12 22 0	12 23 40	12 24 0	12 24 50	12 24 50	12 28 0	12 28 35	..	Artificial respiration, after stoppage of pulse; successful.
47	—	12 33 17	12 34 45	12 40 38	12 40 47	12 42 55	12 44 20	..	..	Ditto Ditto
48	Pariah slut, full grown.	1 10 30	1 12 0	1 19 15	1 19 40	1 19 50	1 23 25	..	1 25 0	Natural respiration was thought to have been re-established as the dog breathed for a minute after stoppage of artificial respiration; but the respiration suddenly ceased again, pulse again stopped, and could not be restored. Artificial respiration after stoppage of pulse; unsuccessful.
49	Powerful, full-grown pariah dog.	1 35 0	1 39 45	1 40 10	..	1 40 20	..	1 43 20	..	Artificial respiration after stoppage of respiration; successful.
50	—	1 50 45	1 52 35	2 4 30	2 6 45	2 6 45	2 9 30	2 11 10	..	Artificial respiration after stoppage of pulse; successful.
51	Healthy, full-grown pariah slut.	2 25 0	2 26 8	2 29 7	2 29 30	2 9 45	2 31 25	2 33 55	..	Ditto ditto
52	—	2 37 41	..	2 38 40	2 38 55	..	..	..	..	Artificial respiration after stoppage of heart; no effect.
53	Full-grown, powerful pariah dog.	11 29 0	14 30 48	11 33 20	..	11 33 40	..	11 37 40	..	Artificial respiration after stoppage of respiration; successful.
54	Healthy pariah pup, six months old.	11 41 0	11 42 30	11 54 5	11 54 20	11 54 20	..	..	11 55 10	Artificial respiration after stoppage of pulse; unsuccessful.
55	—	12 4 30	12 5 40	12 7 5	No record.	12 8 45	..	..	12 8 40	Artificial respiration, after stoppage of heart; unsuccessful.
56	Strong pup, nearly full grown.	12 16 44	12 18 46	12 19 45	12 20 25	12 20 35	12 2 60 Flicker'd and then stopped entirely.	..	?	Artificial respiration after stoppage of pulse; unsuccessful.
57	Healthy, full-grown slut.	12 30 23	12 41 46	12 43 0	12 43 20	12 43 40	12 44 40	12 45 0	..	Artificial respiration after cessation of pulse; successful.
58	Healthy, full-grown pariah slut.	12 50 0	1 1 15	1 4 25	..	1 4 30	..	1 7 25	..	Artificial respiration after stoppage of respiration; successful.
59	—	1 9 30	1 10 40	1 13 0	1 13 5	1 16 15	..	..	?	Artificial respiration after stoppage of pulse; unsuccessful.
60	Healthy pariah pup, three months old.	1 27 30	1 28 10	1 29 30	1 29 40	1 29 45	..	..	?	Artificial respiration after stoppage of pulse; unsuccessful.
61	Lean, but full-grown pariah dog.	1 47 0	1 49 5	1 54 30	1 55 0	1 55 5	1 55 55	1 59 45	..	Artificial respiration after stoppage of pulse; successful.
62	—	2 2 0	2 3 40	2 12 10	2 13 5	2 15 32	..	..	2 15 30	Artificial respiration after stoppage of heart; unsuccessful.
63	Strong, full-grown pariah slut.	2 25 0	2 27 35	2 30 30	2 31 40	2 31 55	2 32 25	2 34 30	..	Artificial respiration after cessation of pulse; successful.
64	—	2 35 50	2 36 55	2 41 15	2 42 0	2 43 0	2 47 45	2 48 0	..	Artificial respiration commenced on heart being barely audible; stethoscope successful.

No. of experiment.	Description of dog.	Inhalation commenced.	Fully under chloroform.	Respiration ceased.	Pulse stopped.	Artificial respiration commenced.	Pulse returned.	Natural respiration re-established.	Heart ceased beating.	Remarks.
		H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	
65	Powerful, full-grown pariah dog.	11 35 30	11 37 10	11 40 50	11 41 8	11 41 15	11 46 30	11 47 12	..	Artificial respiration after stoppage of pulse; successful.
66	—	11 47 30	11 50 0	11 51 15	11 51 30	11 51 45	..	..	11 53 30	Artificial respiration after cessation of pulse; unsuccessful.
67	Strong, full-grown pariah slut.	12 12 30	12 14 25	12 16 10	12 16 38	12 17 0	12 17 45	12 18 53	..	Artificial respiration after stoppage of pulse; successful.
68	—	12 23 0	12 25 5	12 29 0	12 29 45	12 30 8	12 31 5	12 32 40	..	Ditto Ditto
69	Powerful, full-grown pariah dog.	12 46 30	12 49 6	12 50 10	12 50 24	12 51 0	..	A few spasmodic contractions of abdominal muscles.	1 3 50	Artificial respiration after pulse stopped; unsuccessful.
70	Healthy, full-grown pariah dog.	1 11 15	1 13 7	1 18 55	1 19 10	1 19 45	1 35 55	1 38 20	..	Artificial respiration after pulse stopped; successful. Extraordinary case. Hot water thrown over chest.
71	Healthy, full-grown pariah slut.	1 49 16	1 51 11	1 52 5	1 54 16	1 54 17	1 57 2	1 58 5	..	Artificial respiration after pulse stopped; successful.
72	—	2 0 45	2 1 50	2 3 30	2 4 0	Artificial respiration not tried.	..	..	2 8 45	—
73	Full-grown, powerful pariah dog.	2 37 20	2 38 25	2 40 15	2 40 28	2 42 17	..	..	No record; died.	Artificial respiration after pulse stopped; no effect.
74	Full-grown, healthy pariah dog.	2 50 10	2 51 45	2 52 50	2 54 56	2 54 25	2 55 40	2 55 50	..	Artificial respiration after cessation of respiration; successful.
75	—	2 58 0	5 59 40	3 6 0	3 6 30	Artificial respiration not tried.	..	..	3 8 30	—

SERIES III.—(17 EXPERIMENTS.)

APPENDIX NO. III.—*Dogs chloroformised very gradually with 2-dr. doses.*

No. of experiment.	Description of dog.	Inhalation commenced.	Fully under chloroform.	Respiration ceased.	Pulse stopped.	Artificial respiration commenced.	Pulse returned.	Natural respiration re-established.	Heart stopped.	Remarks.
		H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	
1	Full-grown, healthy pariah dog.	12 30 0	12 33 20	12 48 50	12 49 20	..	..	..	12 51 40	½ oz. of $CHCl_3$ used.
2	Ditto.	12 53 0	12 53 50	12 56 0	..	..	..	..	..	Spontaneously breathed again after inhalation was stopped and allowed to revive.
3	—	12 57 0	No record.	12 57 40	12 57 50	12 58 45	..	..	12 58 25	Artificial respiration after heart stopped; unsuccessful.
4	Full-grown, healthy pariah dog.	1 8 0	1 11 10	1 17 10	1 17 20	..	..	..	1 19 42	3 drs. of $CHCl_3$ used.
5	Strong, full-grown pariah dog.	1 26 45	1 27 30	1 35 38	1 35 48	..	..	..	1 37 45	½ oz. of ditto used.
6	Ditto.	1 51 45	1 53 35	2 7 2	2 7 15	..	..	..	2 9 40	3 drs. of ditto used.
7	Strong, healthy pariah slut.	2 19 30	2 24 40	2 33 50	2 34 28	..	..	..	2 36 10	½ oz. of ditto used.
8	Full-grown, large-sized pariah dog.	11 50 30	11 54 22	12 0 43	12 1 0	12 2 0	..	..	12 1 50	2½ drs. of chloroform. Artificial respiration after stoppage of heart; no effect.
9	Ditto.	12 10 6	12 13 57	12 17 50	12 17 58	..	..	..	12 21 35	2½ drs. of chloroform.
10	Ditto.	12 30 5	12 31 50	12 39 39	12 43 0	12 44 0	..	..	12 43 54	3 drs. of chloroform. Artificial respiration after heart stopped; no effect.
11	Powerful, full-grown pariah dog.	1 52 45	1 55 34	1 57 55	1 58 42	..	..	..	1 59 20	3 drs. of chloroform with stethoscope. Artificial respiration commenced when heart's beat about to stop and barely audible.
12	Ditto.	2 7 35	2 8 12	2 12 15	2 12 35	2 13 45	..	..	2 14 10	3 drs. of chloroform used. Artificial respiration; no effect after pulse stopped, and heart barely audible.
13	Lean, full-grown pariah dog.	2 22 30	2 25 0	2 28 55	2 29 10	3 31 45	..	..	2 33 15	3 drs. of chlorform used. Artificial respiration; no effect after pulse stopped, and heart barely audible.
14	Lean pup, eight months old.	11 54 0	11 55 12	12 7 40	12 8 32	12 9 20	Returned at 12.10.50 for a few seconds and stopped entirely.	Gasped thrice.	12 12 25	2½ drs. of chloroform. Artificial respiration; no effect after pulse stopped, and heart barely audible.
15	Powerful, full-grown pariah dog.	12 25 30	12 29 24	12 32 28	12 32 36	12 36 0	12 38 2	12 39 20	..	3 drs. of chloroform. Artificial respiration successful after pulse stopped, and heart barely audible.
16	—	12 42 0	12 44 2	12 55 18	12 56 27	..	..	..	12 58 45	2½ drs. of chloroform.
17	Pariah slut, nearly full grown.	1 6 0	1 8 45	1 11 51	1 12 32	1 13 15	..	..	1 17 20	3 drs of chloroform used. Artificial respiration; no effect after pulse stopped, and heart barely audible.

SERIES IV.—(41 EXPERIMENTS.)

APPENDIX NO. IV.—*Rapid poisoning of dogs with large doses of chloroform; no air allowed.*

No. of experiment.	Description of dog.	Inhalation commenced.	Fully under chloroform.	Respiration ceased.	Pulse stopped.	Artificial respiration commenced.	Pulse returned.	Natural respiration re-established.	Heart stopped.	Remarks.
		H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	
1	Large-sized, healthy pariah dog.	1 43 30	1 44 24	1 46 22	1 46 48	..	..	..	1 50 30	2 oz. of chloroform.
2	Large-sized, full-grown, healthy pariah dog.	11 44 0	11 46 20	11 48 20	11 48 45	..	..	..	11 52 8	3½ oz. of chloroform.
3	Healthy, full-grown pariah dog.	12 7 0	12 8 5	12 8 40	12 9 14	For a few seconds (10) the pulse returned and then ceased altogether.	Spasmodic action of abd. muscles took place at 12-10-50.	..	12 12 10	3½ oz. of chloroform (nearly 4), after stoppage of respiration.
4	Large-sized, healthy, full-grown pariah slut.	12 21 30	12 22 32	12 23 45	12 24 48	..	..	..	12 27 50	6 drs. used in one dose.
5	Full-grown, healthy pariah dog.	1 54 45	1 55 53	1 56 30	1 57 48	..	..	..	1 59 30	6 drs. ditto.
6	Old, but healthy pariah slut.	2 5 30	2 6 40	2 7 47	2 7 55	..	..	..	2 11 12	6 drs. ditto.
7	Small-sized, but full-grown pariah slut.	2 16 45	2 17 52	2 19 35	2 19 40	..	Pulse returned feebly at 2-21-40 for a few seconds.	Spasmodic action of abd. and thoracic muscles occurred.	2 24 10	6 drs. ditto.
8	Ditto ditto	3 0 0	3 1 20	3 5 15	3 6 25	..	..	..	3 9 42	6 drs. do.
9	Healthy pup, eight months old.	12 27 23	12 28 9	12 29 0	12 29 15	..	..	..	12 31 0	6 drs. of chloroform.
10	Lean pup, eight months old.	12 42 45	12 43 20	12 44 20	12 44 25	..	..	..	12 46 20	6 drs. of chloroform.
11	Full-grown, healthy pariah dog.	12 50 18	12 51 11	12 54 55	12 55 30	12 55 50	12 59 25	1 0 20	..	Artificial respiration after stoppage of pulse; successful.
12	——	1 3 55	1 5 3	1 5 13	1 6 40	..	..	..	1 8 7	6 drs. of chloroform.
13	Full-grown pariah dog.	1 13 0	1 14 30	1 15 40	1 15 59	..	..	..	1 17 17	1½ oz. of chloroform used.
14	Healthy pariah, eight months old.	1 27 18	1 27 48	1 28 50	..	..	..	..	No record taken; died.	Galvanism tried from the time respiration ceased till 133-0.; no effect; 6 drs. of chloroform used.
15	Ditto ditto	1 35 11	1 35 37	1 36 38	1 36 53	..	..	..	Do.	Galvanism tried from 1-36-33 for five minutes; no effect; 6 drs. of chloroform.
16	Healthy, full-sized pariah dog.	1 43 30	1 44 0	1 44 50	1 45 7	..	..	..	Do.	Galvanism tried for five minutes; no effect; 6 drs. of chloroform used.
17	Healthy pariah pup.	1 49 8	1 49 39	1 50 40	1 50 50	..	..	..	1 52 9	1 oz. of chloroform.
18	Ditto ditto	1 52 45	1 53 20	1 54 32	1 54 58	..	..	..	1 56 6	5 drs. of chloroform.
19	Full-grown, healthy pariah dog.	1 2 10	1 4 8	1 5 45	1 6 30	..	..	..	1 9 10	1 oz. of rum and 1 oz. of water given, 10, before inhalation; 6 drs. of chloroform.
20	Large-sized, full-grown pariah dog.	1 31 30	1 33 17	1 36 4	1 38 5	..	..	..	1 45 6	Same quantity of rum and ½ oz. of chloroform used.
21	Old, but healthy pariah slut.	2 5 15	2 6 28	2 11 36	2 12 4	..	..	..	2 14 33	Same quantity of rum, ½ oz. of chloroform.
22	Powerful, full-grown Binjari dog.	2 29 10	2 31 22	1st 2 34 20. Inhalation was now stopped, but the dog breathed again. Chloroform was renewed till respiration ceased again at 2-41-30.	2 42 12	..	..	..	2 45 12	Same quantity of rum, 1½ oz. of chloroform.
23	Healthy pariah pup, five months old.	2 47 40	2 48 28	2 49 20	2 49 25	..	..	..	2 52 6	No rum given; 2 drs. of chloroform.
24	Healthy pariah pup, five months old.	2 53 20	2 53 52	2 55 2	2 55 18	..	..	..	2 57 48	No rum; 2 drs. of chloroform.
25	Healthy, full-grown pariah slut.	12 49 14	12 50 30	12 52 5	12 53 51	..	..	..	12 56 30	1 oz. of rum given with water; 6 drs. of chloroform.
26	Large-sized Binjari dog.	1 12 0	1 13 42	1 23 10	1 24 5	..	..	..	1 25 42	Same quantity of rum; 1 oz. of chloroform in 1 dr. doses.
27	Full-grown, healthy pariah dog.	1 40 9	1 42 40	1 46 30	1 49 3	..	..	..	1 52 9	Same quantity of rum; 5 drs. of chloroform.
28	Large-sized, healthy pariah dog.	2 11 0	2 13 30	2 15 30	2 17 52	..	..	..	2 18 45	½ oz. of rum given; 7 drs. of chloroform.
29	Healthy, full-grown pariah slut.	2 24 15	2 25 10	2 27 0	2 28 45	..	..	..	2 30 15	2 drs. of rum given; 6 drs. of chloroform.
30	Ditto ditto	2 41 50	No record taken.	2 51 20	2 52 55	..	..	..	2 54 48	½ oz. of rum, 1 oz. of chloroform.
31	Healthy, nearly full-grown pariah dog.	11 52 45	11 53 32	11 56 37	11 57 12	..	..	..	11 59 35	2 drs. of rum, 2½ drs. of chloroform.
32	Healthy, large-sized pariah slut.	12 15 10	12 16 30	12 21 48	12 22 15	..	..	..	12 25 40	½ oz. of rum, 7 drs. of chloroform.
33	Powerful, full-grown pariah dog.	12 47 0	12 48 18	12 48 40	12 50 16	..	..	..	12 51 15	½ oz. of rum, ½ oz. of chloroform.
34	Old, large-sized pariah dog.	1 5 35	1 7 22	1 10 0	1 10 40	..	..	..	1 12 33	2 drs. of rum, 6 drs. of chloroform.

No. of experiments.	Description of dog.	Inhalation commenced.	Fully under chloroform.	Respiration ceased.	Pulse stopped.	Artificial respiration commenced.	Pulse returned.	Natural respiration re-established.	Heart stopped.	Remarks.
		H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	
35	Lean, full-grown pariah dog.	11 23 0	11 24 6	11 26 40	11 27 15	..	..	..	11 28 45	3 drs. of rum, 3½ drs. of chloroform.
36	Full-grown, healthy pariah dog.	11 52 10	11 55 7	11 55 17	..	..	11 55 54	11 59 45	..	3 drs. of rum, 3 drs. of chloroform. Artificial respiration after stoppage of respiration; successful; 3 drs. of chloroform used.
37	Full-grown, powerful pariah dog.	12 5 19	12 6 34	12 7 28	12 8 8	..	..	..	12 10 23	——
38	Ditto ditto	12 20 10	12 21 30	12 24 6	12 24 38	..	..	..	12 28 10	3 drs. of chloroform used.
39	Lean, small-sized pariah dog.	12 32 40	12 34 18	12 37 40	12 39 19	..	..	..	12 41 6	½ oz. of chloroform used.
40	Healthy, small-sized pariah slut.	12 45 45	12 46 22	12 49 2	12 49 55	..	..	..	12 51 10	3½ drs. of chloroform used.
41	Full-grown, healthy pariah dog.	12 55 8	12 56 50	1 0 34	1 1 17	..	..	..	1 3 2	½ oz. of chloroform used.

REPORT OF THE LANCET

Special Sanitary Commission

ON

PUBLIC ACTION IN RESPECT OF COMMON LODGING-HOUSES.

PRIVATE ENTERPRISE AND COMMON LODGING-HOUSES AT GLASGOW.

No. III.

THE building at the public expense of seven common lodging-houses in Glasgow has had a beneficial effect upon private enterprise in this particular line of business. The trustees, acting under the Glasgow City Improvement Act, have given an example which has been followed. There are in Glasgow common lodging-houses of the vilest description, and as bad as anything that can be found in London, but there are also some lodging-houses that are nearly as good as those built and managed by the trustees. The principal of these latter are known as Burn's model lodging-houses, and have been organised by Mr. Robert Burn with great intelligence and enterprise. We visited the largest, and found a recreation hall which was, if anything, better provided with newspapers and amusement than were those under the trustee management. Here, also, there is a platform for entertainments, and every Friday an amateur concert is given by the lodgers. Mr. Burn offers prizes to the best singers or reciters, and these consist of such sensible articles as woollen socks or stout shirts. The audience itself decides by vote to whom the prizes shall be given. These entertainments are useful in maintaining health, for they help to keep a large number of men away from the public-house, while giving to the successful performers useful clothing they can ill afford to purchase. There is here, also, a provision shop on the premises, and a post-office, together with stamps and stationery. The kitchen, scullery, and dining rooms are large and well-fitted with every requisite. The lavatories are also well arranged. There are several little cabinets where footbaths, soap, and towels are provided free of charge. The closets and urinals are in a back yard roofed over with glass, raised a little above the wall, so that the air passes out without hindrance. The walls are of enamelled bricks, the whole being clean and well ventilated. The stone stairs leading to the dormitories have on one side a stair-carpet, so that the men at night need not tread with bare feet on the stone when going from the dormitories to the closets. The bunk system of beds has also been adopted here, and there are twelve small private rooms let at 6*d.* a day. The dormitories have good windows, good light, and a through draught can be established; but we failed to notice any system of ventilation, which depends on the accidental opening of doors and windows, and ceases to exist when these are all closed. To the superficial and casual observer this common lodging-house may seem as commodious, as clean, as well-organised, and as well kept as those built by the city trustees; but, from a scientific and technical point of view, it is naturally inferior. Nor can it be expected that persons who make it their business to keep common lodging-houses should possess the scientific knowledge, and have at their command the technical engineering skill, which is at the disposal of a body of trustees, such as that governing the city of Glasgow. The State or an enlightened local authority may build and ventilate with some success barracks, hospitals, and in the same manner, the problem being in many respects similar, common lodging-houses; but it is hardly to be expected that the ordinary common lodging-house keeper will bring to bear the same amount of scientific research combined with technical experience.

The question is to house for a minimum cost, in a minimum space,—four hundred cubic feet at the outside,—a population of extremely poor, disorderly, and dirty people. The discipline imposed must be such as shall not cause them to rebel and resist, and yet which shall instil orderly and cleanly habits totally foreign to their nature. In the dormitories, the ventilation must be automatic and to a great extent mechanical or artificial. This can only be provided by such architects or engineers as have specially studied the subject; and, for so vast an enterprise as the construction of seven common lodging-houses at a cost of £91,068, this special, expensive, and technical knowledge could be and was obtained. Hence the very satisfactory result, and hence the conviction forced upon us that the problem can only be solved when dealt with in a wholesale manner. Burn's common lodging-houses are admirable, are probably among the best that have ever been built for profit by a private individual; still they do not possess the advantages described in our last report when dealing with the Clyde-street Common Lodging-house and its prototypes built for the City Trustees. Then when we crossed the street and went to another of Burn's lodging-houses, we found that we had already seen the best that could be seen. For instance, at this second house the closets ventilated on the stairs, and from the stairs of course the dormitories derived a large proportion of their air supply.

Having visited what was best in Glasgow, we now attempted to discover what might be considered the worst common lodging-houses in the town. These are for the most part in the neighbourhood of the Saltmarket. The first we entered had oil-painted walls and was clean throughout. There were waterclosets with a good flush out, but not ventilated. The rooms had no means of ventilation, not even a fireplace, and the windows are all shut when the lodgers enter. The entrance to another lodging-house was down a narrow passage leading to a small filthy yard, where an overflowing midden was situated, and was evidently not large enough for the great number of inhabitants of the surrounding houses. The windows immediately above the staircase door had each a sink outside, into which all manner of slops and filth is poured. Of course the sink leaks and the slops overflow, saturating the house and dripping on the heads of the people who pass the staircase door. In a dark space between two day rooms on the ground floor is a rough sort of washing place, with

loose uneven flagstones that in an unequal manner partially cover the floor sink under the tread in the damp sloppy earth. This place is abominably dark, and on one side in the recess underneath the staircase, where there is no air and no light, are situated three closet seats. The pans are provided with a good flush of water, but there is no light, no ventilation, no privacy. The three seats are not separated one from the other. In the floors immediately above, receiving the emanations from this damp, dark washhouse and the closets, are small rooms containing three or four filthy double beds where men sleep in couples. The bedding is black, and the accommodation so scant, the habits of the lodgers so degraded, that they sometimes even urinate on the floor, and there were pools of urine still stagnating on the dormitory boards. Of course vermin abounded on all sides. In one of the dormitories we found a half-naked lad hiding himself under one of the beds. He had, it appears, mistaken us for School Board inspectors. It was a wretched old house, that, of course, had never been intended for a common lodging-house. Two little shops on the ground floor had been converted into common kitchens. Here women, who lodged in single apartments close by, came and associated with the men during the daytime. Bed sheets and nondescript articles of clothing were hanging on all sides to dry, adding a sour dampness to the close, heated atmosphere of these wretched kitchen day rooms.

The next place we entered was a tenement which had been converted into a small common lodging-house. This was a little cleaner and had a watercloset which certainly did not lack ventilation, for it was only separated from the street by a few boards so loosely put together that great open spaces remained between them. Another closet, at the head of the stairs, had no ventilation, was dark, and a lamp had to be kept burning within all day long. Finally, we went to a lodging-house which was in a state of transition. For many years it had been allowed to exist without any closet whatsoever. It was a very old house, with heavy wooden doors four inches thick. When this house was built closets were considered superfluous luxuries. A pail answered all purposes, and it had to be carried downstairs to the midden in the yard. Now, however, a watercloset was in course of construction; and, pending its completion, it would seem as if the pail was not always provided, for we noticed the stairs were soiled with fæcal matter. We had now seen enough; enough to show to what depth of darkness, dirt, degradation, and unwholesomeness may degenerate the common lodging-houses of the poor when left in the hands of persons who ignore the laws of health and the claims of decency.

INFLUENZA.

REPORTS ON THE DISEASE.

NOW that the epidemic of influenza has practically left the Continent, reports of its progress and features are the order of the day. The *Journal de Médecine* (Feb. 5th) contains one such on the epidemic in Brussels from Dec. 20th, 1889, to Jan. 20th, 1890, drawn up by Drs. Spehl, Gratia, and Verneuil. The report opens by mention of some of the more important epidemics in Europe in past times; and it is pointed out that, together with certain common features, some of these epidemics had special characteristics. "In the epidemics of 1560 and of 1762 there were no catarrhal phenomena; in 1799 the disease took a hæmorrhagic form; in 1830 the dominant signs were cramps and intestinal derangements; whilst during the epidemic of 1837 a large number of patients were attacked with hæmaturia." The report then proceeds to analyse the features of the late epidemic under the heads of (1) general symptoms; (2) special symptoms, which do not require to be regarded as different forms of *grippe*—they are nervous, respiratory, and gastro-intestinal; (3) frequent but inconstant signs; (4) exceptional signs, as delirium, syncopal tendency, gastralgia, epistaxis, eruptions, sudaminal, scarlatiniform, or rubeolar; (5) incubation, in a few cases from three to four days; (6) modes of onset; (7) duration, the acute symptoms two or three days, pain occasionally for a week, headache generally disappearing some days before the lumbar pains, the respiratory symptoms lasting mostly from eight to ten days, the digestive often several weeks; (8) intensity of the disease very variable; (9) convalescence, in which the anorexia and extreme weariness are specially noticed; (10) relapses frequent, especially in the gastric cases; (11) duration of the epidemic, about a month; (12) climatic conditions preceding, accompanying and following the epidemic; (13) modification of symptoms from the beginning to the end of the epidemic, the latter cases showing a slower evolution; (14) influence on other affections; (15) the most frequent complications; (16) analogy to other diseases; (17) classes; (18) professions; (19) ages, mostly adults, about thirty out of a thousand children; (20) sex, equally attacked; (21) immunity; (22) contagiousness—no fact for or against absolutely determined; (23) morbid anatomy; (24) mortality in Brussels during the epidemic; and (25) dominant characters of the epidemic, which are summed up as follows: 1. The symptom "pain" has been constant and very intense. 2. The morbid manifestations have been numerous and varied (respiratory and gastro-intestinal catarrhs, eruptions, fetid sweating, pains in knees, syncope, &c.). 3. The disease by itself has been benign, but certain complications have imparted to it a grave character. 4 Complications have been mainly those of the respiratory system (pneumonia principally).

The questions issued by the committee formed in Berlin, at the instance of Professor Leyden, for a collective investigation upon the recent outbreak of influenza, are as follow:—1. When and where did you observe the first case of influenza? 2. When did the epidemic in your locality reach its height? 3. When did you consider that the epidemic had ceased? 4. What proportion of the population in your locality were attacked, according to your calculation? 5. What age, sex, or profession has seemed to have been predisposed to the attacks? 6. What symptoms worthy of note have you observed (*a*) in the nervous system? (*b*) in the respiratory and circulatory? (*c*) in the digestive? (*d*) in the cutaneous? 7. What complications and sequelæ have you seen? 8. With what frequency have you seen pneumonia coincide with influenza, and what characters did those cases of pneumonia observed by you present? 9. How many cases of relapse of influenza have you seen? 10. What has been the course of convalescence? 11. What influence has the pandemic exerted on prevalent diseases? 13. What were the causes of death? 14. What mode of treatment has given you the best results? 15. Do you consider influenza contagious or not? It was, we understand, the intention to appeal to other countries to join in this collective medical inquiry, and it would be an opportunity for promoting the cause of international collective investigation which should not be missed. This movement, initiated under high auspices at the Copenhagen Congress, was a failure, owing to the difficulty of finding funds, and only last year the committee organised throughout Great Britain by the energy of the late Dr. Mahomed in connexion with the British Medical Association announced the termination of its career.

In addition to the above-named German collective investigation (to which already upwards of 1000 practitioners have furnished replies), there have been instituted inquiries by continental boards of health similar to those of the Local Government Board. Thus the Bavarian Government has issued circulars inviting information upon the first appearance of the epidemic in different districts, the manner of its diffusion, the types it presented, the differences, if any, in the type of the disease according to class and age, the immunity of certain localities, and also as to prophylaxis and treatment. The information is asked to be sent to the Bavarian Home Office by March 15th. A similar inquiry has been initiated in Vienna, reports being asked for upon all cases treated between Dec. 17th and Jan. 17th. The *Allgemeine Wiener Med. Zeitung* of Feb. 11th fears that the inquiry will be imperfect, owing to the lack of observation and of inclination to record their experience on the part of some practitioners.

THE BACTERIOLOGY OF INFLUENZA.

Dr. E. Levy, of the University of Strasburg, reports[1] his researches into the bacteriology of influenza, which he instituted in the medical clinic as soon as cases were admitted. The sputum yielded, in addition to staphylococci and streptococci, large quantities of Fraenkel's diplococcus pneumoniæ; and since all these forms are known to be met with in the sputa of healthy individuals, their detection was not very significant. But more conclusive information was yielded by the examination of the diseases following on the epidemic affection. Among these at Strasburg the

[1] Berliner Klin. Woch., Feb. 17th.

most notable was otitis media, and Dr. Levy therefore examined the secretion from the ear in seven such cases, making cultures and inoculating mice in all cases. In the first six examined the diplococcus occurred in pure culture, but in the seventh, in which the membrana tympani had been perforated for some days, there was in addition the staphylococcus albus. He also examined the fluid in five cases of empyema, and in one of sero-purulent and three of serous pleuritic effusion, which had supervened on influenza. Of these nine cases eight yielded the diplococcus once together with staphylococcus albus (a serous exudation), and in one case (also serous), the staphylococcus was found alone. He obtained, by puncture of the affected lung, a culture of diplococcus from a case of broncho-pneumonia, and in one of lobar pneumonia the hepatised portion (grey) yielded this organism and the staphylococcus albus. He points to the remarkable fact that in seventeen out of these eighteen cases the diplococcus was found, and states that there is no question at all as to its identity with the organism discovered by Fraenkel in pneumonia. There were minor points of difference—as, for instance, that it did not seem so virulent to mice as the "pneumonococcus," and the culture in agar was smaller and clearer. Moreover, Leyden and Guttmann have also noted the diplococcus in influenza-pneumonia. Dr. Levy states that in Strasburg the general impression was that there was some connexion between the prevailing epidemic and the exceptional prevalence of croupous pneumonia. So far as the diplococcus may be held to take a chief share in the production of pneumonia, it is possible that it may play the same part in influenza. But it is by no means proved that pneumonia is excited by a solitary organism, and possibly in influenza also there may be various forms of fungi capable of causing it, and that they attack the pulmonary organs when there is a predisposition to lung affection. In connexion with these investigations, it may be well to recall the similarity to the diplococcus noted by Dr. M. Jolles, and also by Prof. Weichselbaum, in the microbes they found in influenza cases. Dr. H. Neumann[2] reviews the results of all these inquiries in another paper.

THE INFLUENZA IN HUNGARY.

At the meeting of the Society of Physicians at Buda-Pesth on Jan. 25th, Dr. Angyan gave an account of the recent epidemic,[3] which commenced in that city with a few sporadic cases in the middle of December, and assumed an epidemic form at the end of the month. By the first half of January it was calculated that about 50 per cent. of the population had been attacked. He distinguished three forms—the nervous, the catarrhal, and the gastric. In certain cases an incubation stage of about two days' duration had existed. The attack began with shivering or rigors, articular pains, headache, and severe depression. This stage lasted only a few hours. It was followed by the symptoms peculiar to each type. In cases where profuse diarrhœa occurred, Dr. Angyan had found albumen and hyaline casts in the urine. In each form there might be cutaneous complications—as urticaria, herpes, erythema nodosum, and scarlatiniform eruptions. Otitis media was a not uncommon complication. Some patients had hæmoptysis. The gravest complications were pulmonary inflammations. He had ascertained that there had been an enormous increase in the number of such cases in Buda-Pesth during the epidemic. The pneumonia arose concomitantly with the influenza, and its form was atypical; that is, the fever was often intermittent, bronchial breathing and crepitation were not always marked, and rusty expectoration was only observed in about 50 per cent. of the cases. In spite of complications and the tendency to relapse, the epidemic was a mild one. The affection was chiefly dangerous to those already suffering from pulmonary or cardiac disease. The drugs employed to control fever and relieve pain were antifebrin, phenacetin, and especially antipyrin and quinine. The respiratory and gastric troubles required their special treatment. For the paroxysmal cough turpentine inhalations were found useful. Great importance was attached to diet and to the necessity of the patient keeping to his room until convalescence was well established. Dr. Angyan held that, although influenza was for the most part miasmatic and spread by atmospheric agency, in small degrees it was contagious. The discussion on the paper was adjourned to the next meeting of the Society.

[2] Ibid [3] Wiener Med. Wochensch., No. 7.

STATISTICS OF INSANITY IN ENGLAND, WITH SPECIAL REFERENCE TO ITS ALLEGED INCREASING PREVALENCE.

THE following is an abstract of a paper read before the Royal Statistical Society on Tuesday evening, the 18th inst., by Mr. Noel A. Humphreys.

At the outset of the paper the author freely admitted that the statistical data now existing did not admit of a thoroughly satisfactory answer to the question "Is insanity increasing?" The object of the paper was quite as much to call attention to the nature of the defects of our present statistical data as to urge that, at any rate, conclusions as to increase of insanity based upon the constantly increasing numbers of the registered insane dealt with in the reports of the Lunacy Commissioners are entirely untrustworthy. It was obvious, and had been freely admitted by the commissioners, that there existed a large though unknown number of the insane outside their official knowledge, their information as to the insane not under treatment in asylums and workhouses being practically confined to those in receipt of pauper relief. At the same time there was good ground for believing that a constantly increasing proportion of the aggregate insane in the country came within the cognisance of the commissioners. It was pointed out that at the last two censuses (1871 and 1881) information concerning all persons of unsound mind was obtained from the householder. The total number exceeded by no less than 12,264 and 11,390 respectively the registered number of cases of insanity reported to the commissioners on Jan. 1st in each of those census years, forming a source which supplied no inconsiderable proportion of the so-called new cases registered from year to year. It was shown that in 1871 the commissioners' numbers represented only 82·1 per cent., and in 1881 86·5 per cent., of the respective totals of the enumerated cases. The census information on this point, being supplied by heads of families, was far more likely to understate than to overstate the true number of the insane. According to the census numbers, the increase of cases of existing insanity between these years (allowing for increase of population) was 7 per cent., instead of 12 per cent., as shown by the commissioners' figures, and, on the hypothesis of the greater accuracy of the census numbers in 1881, even the smaller increase was probably apparent rather than real, especially as some increase of existing cases was undoubtedly due to the effect of reduced mortality causing accumulation. Thus, while the mean annual rate of insanity increased 12·9 per cent. between the five-year periods 1859–63 and 1864–68, the increase between succeeding quinquennia declined successively to 11·7, 7·6, 5·0, and 2·8 per cent. respectively. Moreover, it was shown that, in spite of constantly increasing accuracy of registration, there has been no increase in the rate of admissions to population during the last ten years, and that the rate in 1884–88 showed an actual decline. The increase in the proportion of insanity to the population was due partly to accumulation and partly to more complete registration. There had been a marked increase in the mean age of the inmates of asylums; and while the proportion of those living under the age of forty-five years had constantly declined, the proportion living over that age had increased. Considerable difficulties stood in the way of estimating the amount of true accumulation, or survivorship, from the undoubted reduction that had recently taken place in the mortality of the insane. The Lunacy Commissioners' tables show, however, that the annual rate of mortality in asylums declined from 10·31 per cent. in 1859–68 to 9·55 in 1879–88. The improved tables recently issued by the Statistical Committee of the Metropolitan Asylums Board rendered it possible to calculate the effect of reduced mortality upon the numbers of the inmates of the asylums for imbeciles at Leavesden, Caterham, and Darenth. The actual inmates of these metropolitan asylums increased from 1344 at the beginning of 1871 to 4919 at the end of 1888; and the annual death-rate steadily declined from 16·63 per cent. in 1871 to 6·85 in 1886. Again, if it be assumed that the high death-rate in 1871–73 had since been maintained, and if no extra admissions had taken place to balance the extra deaths, the number of surviving inmates of these asylums at the end of 1888 would have been but 3346, instead of the 4919 actually then in

residence. Thus no fewer than 1573 of these inmates owed their survival to the marked decline in the death-rate during the last fifteen years. Similar calculations, showing the effect of reduced mortality, would be possible with regard to the whole of the registered cases of insanity if the Lunacy Commissioners published similar data to those furnished by the Metropolitan Asylums Board. The paper dealt with the improvements of statistical data necessary for a true solution of the problem, and mentioned points on which further information was necessary. The author thought provision should at once be made for obtaining trustworthy statistics concerning the annual admissions, discharges, and deaths occurring among the pauper insane retained in workhouses or receiving out-door relief. No real difficulty stood in the way of obtaining these. The responsibility for collecting and utilising them rested between the Local Government Board and the Lunacy Commissioners. The hope was expressed that at the approaching census no retrogressive step would be taken in the direction of omitting from the householder's schedule the requisition for information on this subject, information which had afforded considerable assistance in examination of the validity of the alleged increase of insanity in England; and as householders had at the last two censuses been accustomed to supply this information, and as there was good ground for believing that it was now given with an increasing accuracy at each census, there seemed no sufficient ground for surrendering this subject of inquiry, although it was admitted on all hands that the numbers enumerated did not fully and accurately represent the true numbers of the insane. It was obvious that the enumerated numbers at any rate more nearly represented the true numbers than those obtained under the present system of registration by the Lunacy Commissioners.

Dr. HACK TUKE rejoiced to find the conclusions of Mr. Humphreys so much in accordance with what was to be regarded as a satisfactory and encouraging mode of viewing the alleged increase of insanity. He admitted that there might be a considerable amount of nervous disorder not registered, which might mislead them. They should be a little reserved as to the possible increase of those affections on the boundary line of actual insanity. The statistics before them to-night did not at all authorise them in stating that they were on the increase in England and Wales. Regarding the class outside asylums, he had recently made inquiries in Yorkshire, and found a strong feeling with county superintendents that there existed a number of cases never perhaps likely to go into the asylum for mental degeneration. Nevertheless he thought that statistical proof of any increase was entirely wanting. Statistics in Yorkshire went contrary to the assertion that insanity was increasing by accumulation, and he found the mortality rate in Wakefield in the first decennium 16·02, whereas in the last decade it was 11·5; evidence distinctly in favour of the view of Mr. Humphreys, and the average of recoveries had been 42 per cent. up to the present time. They were fully justified in stating that the accumulation was due to the lower mortality rate. With regard to the apparent increase in asylums from 59·4 per cent. in 1861 to 72 per cent. in 1889, that was founded on a statement by medical men that we had reason to feel very much alarmed at the increase of insanity. If we took the numbers in workhouses at 26 per cent., and with relatives at 14 per cent., we found in 1889 the numbers in workhouses reduced to 22 per cent., and with relatives to 5·5 per cent., so that it rather seemed a transference than an increase to the asylums. On eliminating these fallacies, they were still far from having before them all the data for an exact conclusion.

Dr. SAVAGE said his experience in Bethlem threw him into relationship with a changing disease. It seemed to be one of the bugbears of the age that lunacy was running like wildfire through the population, and it was satisfactory to have this impression removed by the facts brought before them to-night. A large number of people were on the borderland of insanity, and it was questionable on which side they should be reckoned, it depending in many cases on the length of the purse of their friends. The forms of insanity differed very much; and he thought it would be more alarming if, though there was no actual increase in the numbers of the insane, it could be shown that the form of the insanity in England had become worse. There was no end of statistics of insanity, and he thought little more could be done than had been done; and that if the commissioners were obliged to provide all the statistics spoken of, that hard-working body would be obliged to strike.

Dr. G. B. LONGSTAFF thought it was conceivable that while insanity as regards the mass of the population might be increasing, it diminished as regards certain classes, and might be explained as the personal equation of the committee of management of the asylums—namely, the discharge of patients through changes in that committee. If Mr. Martineau had been present to-night, he would have told them that, from whatever the cause, the increase in the number of lunatics chargeable to the ratepayers of London was 250 per annum, which meant that asylums containing accommodation for 1000 inmates would have to be erected every four years, each one more costly both to erect and to maintain than any one which preceded it.

Dr. RICHARDS (Hanwell) accounted for the increase in the City of London by the number of people coming from the outlying districts who gravitated to London and became insane, but were shortly afterwards sent back to their own parishes. He had looked back to the records of Dr. Farr in Hanwell in 1831 and 1833, and found none on which these statistics could be based. The statistics regarding first attacks could only be derived from the friends who visited them, as the statements of the relieving officers were absolutely untrustworthy; and in the absence of such history they sent up every year a very elaborate return of all the cases of transfers, many of whom got the benefit of the doubt, and were spoken of as "first attacks."

Dr. NEWINGTON (President of the Medico-Psychological Association) thought the evidence of increase was entirely negative, and gave some interesting statistics on the subject, which led him to believe that whatever evidence was procurable seemed to favour the view that insanity occurring year by year was almost stationary.

Mr. HUMPHREYS having briefly replied, a vote of thanks to him was proposed by the Chairman, and carried.

HEALTH OF THE NAVY.

No. I.

THE statistical report on the health of the Navy for 1888 states the average strength to have been 50,060 officers and men. The cases of disease and injury entered on the sick list during the year amounted to 987 per 1000 of the strength, the deaths to 5·71, the proportion discharged as invalids to 16·06, and the mean daily sick to 41·96 per 1000. These results are very satisfactory, showing a marked reduction upon those of the preceding year, and comparing favourably with the average of the last ten years. The death-rate was lower than in any of the thirty-two preceding years, with the single exception of 1883, when it was the same as in the year now under review. The great reduction in the deaths compared with 1887 occurred in those by injuries and suicide, for if they be omitted the death-rate by disease amounted to 3·99 in 1888 and 4·91 in 1887, both evidence of a very satisfactory condition of health.

The average strength on the home station was 24,000. The cases amounted to 762, the deaths to 4·83, the discharges by invaliding to 21·33, and the mean daily sick to 40·16 per 1000, all lower than in the preceding year. The groups of diseases which gave rise to the highest proportion of cases were—syphilis and gonorrhœa 162 per 1000, diseases of connective tissue and skin 158, and injuries 149 per 1000. Diseases of the respiratory system were the most fatal, the death-rate by them being 1·12 per 1000. Four cases of small-pox occurred in the Channel squadron at Gibraltar; they were all modified by previous vaccination and made good recoveries. The disease was contracted at Lisbon, where it was epidemic at the time. The cases occurred in four different ships, and it did not spread among the crews. There were 53 cases of measles, chiefly in the *St. Vincent* and *Impregnable* training ships and *Excellent* gunnery ship; 2 cases terminated fatally, but the cause of death in one of them appears to have been acute tuberculosis developed subsequently to the measles. There were 31 cases of scarlet fever, all of which did well; 8 occurred in the *Ganges* training ship, the others were pretty well scattered. In all cases where practicable the patients were

treated in hospital on shore, and every care was taken to disinfect clothing, bedding, &c. "When it is considered what a very favourable field exists for the spread of such diseases in the relatively dense populations on board ship, the success attending these preventive measures may be considered very satisfactory." A fatal case of typhus occurred on board the *Excellent;* the disease was contracted in Galway by a seaman on leave. There were 27 cases of enteric fever, with 8 deaths; it does not appear in any case to have been traced to an insanitary condition of the vessel. Mumps prevailed as an epidemic in several of the training ships, chiefly at Dartmouth, Devonport, Portsmouth, and Greenock. Five cases of diphtheria occurred, of which 1 proved fatal; 3 of them contracted the disease at Portsmouth and 2 at Devonport; they were all in different ships. There were 26 cases of erysipelas distributed among sixteen ships; one man, who was taken ill when on leave at Portsmouth, died. No information is given as to the probable cause in any of these cases. As already stated, venereal diseases furnished 162 cases per 1000 of strength; of these 63 were of primary syphilis, 23 of secondary, and 76 of gonorrhœa and its sequelæ. The proportion constantly non-effective by these diseases respectively were 0·5, 2·6, and 5·6 per 1000. These ratios are all lower than in the preceding year, but all above the average of the last ten years. Diseases of the respiratory system furnished 83 cases and 1·12 deaths per 1000 of strength. Of the 27 deaths by this group, 5 were caused by bronchitis, 11 by pneumonia, and 11 by pneumonic phthisis. The prevalence of these diseases is greater, but the mortality less, among the boys of the training ships than in the rest of the force. The deaths from general injuries were 21, the same number as in the preceding year, and of these 14 were by drowning. Of local injuries, 11 proved fatal, but only 3 occurred on duty; 5 were on leave, and 3 were under the influence of drink on return from leave. There were 3 suicidal deaths, all by hanging.

The average strength of the force in the Mediterranean was 5800, among whom the cases were in the proportion of 1066, the deaths of 6·37, the invaliding to England of 40·68, and the daily sick of 40·04 per 1000, all of them lower than in 1887, and also under the decennial average. The class of injuries furnished 259 per 1000 of strength, or very nearly one-fourth of the whole; diseases of connective tissue and skin, 249; those of the digestive system, 141; venereal diseases, 109; and continued and malarial fevers, 90. Enteric fever was the most fatal disease, giving a ratio of 1·55 deaths, nearly one-fourth of the total, and to these should be added 2 returned under the head of peritonitis, but which appear to have been typhoid; these would increase the ratio to 1·89 per 1000. Of 47 cases returned as enteric fever, 19, with 4 deaths, occurred in the *Racer*, stationed at Suakim; the disease appears to have been caused by the insanitary condition of Custom House Creek, where, for strategic reasons, the ship was unavoidably anchored. Six cases occurred on board the *Grappler* at Gibraltar, and were attributed by the medical officer "to bilge effluvia, arising at the time from an inaccessible part of the bilge beneath the small-arm magazine." As soon as this was opened up and cleared the disease ceased. In none of the other ships which had cases could local causes be traced. There were 152 cases of remittent fever, being less than half the number of the preceding year. They occurred chiefly at Malta. The reduction in the numbers was attributed to the improved sanitary condition of the island, improved water-supply, and the departure of the fleet prior to the summer heats. Under the head of "Multiple Injury" a case is noted of a man who, surprised by the enemy near Fort Hudson, Suakim, received fourteen wounds, seven of a severe nature, but ultimately recovered, and was pronounced fit for duty. Only one death from drowning occurred during the year, and that in the case of a man not on duty. There was also only one suicidal death, that of an assistant sick-berth attendant, caused by swallowing strong sulphuric acid.

On the North American and West Indian stations the average strength was 2600; the cases amounted to 996, the deaths to 6·15, the invaliding to 23·46, and the daily sick to 39·2 per 1000, all except the mean sick lower than in 1887, and all under the average of the last ten years. One-fourth of the cases was the result of injuries; of the classes of diseases, those of the connective tissue and skin, and of the digestive system, and venereal cases, were the most prevalent, causing collectively about one-half of the admissions. Eight cases of enteric fever occurred, with 3 deaths, all at Port Royal, Jamaica. The Deputy Inspector-General attributed them to the place where the vessels were moored, "a bend of the harbour, close off the dockyard, where a peculiar eddy of wind always blows, and where filth and refuse collect." After the ships were removed to the other end of the harbour, no more cases occurred. Two cases of yellow fever were reported on board the *Ready* at Port-au-Prince, Haiti, the sanitary condition of which is described as "deplorable." They were taken to Port Royal, where they died in the Naval Hospital; the ship was ordered to proceed at once to Halifax, and no further cases occurred on board. In the class of injuries 2 deaths were recorded by drowning, and 1 by asphyxia while engaged in diving operations.

The average strength on the south-east coast of America was 550; the cases were in the ratio of 824, the deaths of 7·27, the invaliding of 23·63, and the daily sick of 28·56 per 1000, all higher than in the preceding year. Two cases of yellow fever, of which one ended fatally, occurred in the *Swallow* at Rio de Janeiro where the disease was prevailing. All the ships anchored in the harbour "proceeded to sea, running south to cooler latitudes," and no more cases occurred in them. One death from drowning occurred when the man was on leave.

On the Pacific station the average strength was 1480; the cases amounted to 1110, the deaths to 4·05, the invaliding to 19·59, and the daily sick to 37·66 per 1000; all, except the cases, showing a decrease upon the previous results. Of the 6 deaths 1 only was caused by disease; of the other 5, 2 were by drowning, 1 by the premature explosion of a breechloading gun, 1 by accident on a railway-trolly, and 1 by a stab in a street brawl. The very low death-rate from disease, 0·67 per 1000, is remarkable. One case of enteric fever was recorded, contracted at Lima. The admissions for venereal diseases were 147 per 1000 of strength, and the proportion constantly non-effective from this cause was 9·85 per 1000.

Correspondence.

"Audi alteram partem."

THE HYDERABAD CHLOROFORM COMMISSION.

To the Editors of THE LANCET.

SIRS,—The comparative shortness of the time available, and the number of other speakers, prevented me joining in the debate on this subject at the meeting of the Medical Society on the 10th inst. On the other hand, the interest taken in the matter is so great, and its importance so obvious, that I feel justified in asking you to grant me a space in your next issue, in order that I may express my views. The Commission have performed a very large number of experiments, from which they have deduced certain opinions as to the action of chloroform on animals, and have used these opinions as a basis for formulating certain rules for the administration of this anæsthetic to human beings. It is impossible, of course, to attempt to criticise the whole of the work of the committee, and I shall therefore limit my remarks to the most important features of their work.

The Hyderabad Commission agree with all other observers, in finding that the blood pressure is rapidly reduced by the inhalation of chloroform; this was generally accepted, and does not appear to have required re-investigation. They do not, however, seem to have laid any particular stress upon the movements of the pulse, or have not at any rate recorded any opinions as to its relation to descending arterial pressure and heart beat. This is a most important point, for on such observations are founded the opinions expressed by the Chloroform Committee of the Medico-Chirurgical Society, in these words: "It has been observed in all instances of poisoning with the smaller doses of chloroform that the pulse is imperceptible for some time before the heart ceases to beat"; and I would add, it is precisely these cases of death from small doses which cause the greatest anxiety, and to explain which any information would be most acceptable. Such information cannot be found in the report of the Commission.

Physiologists tell us that, in asphyxia experiments on dogs, the heart continues to beat for about three minutes

after respiratory movements cease, but that so long as the heart is beating the animal is capable of being resuscitated. The Commission inform us that, in their experiments, the hearts generally continued to beat for from two to six minutes after cessation of breathing, but that the animals could only be revived if artificial respiration were commenced within thirty seconds of the respiratory failure. From this fact they conclude that the respirations and not the heart are at fault; but surely it is equally capable of explanation on the supposition that the heart itself had been poisoned, and was, therefore, no longer capable of healthy action. Further, I cannot find in the report any observations as to the temperature under which the experiments were conducted—a not unimportant point, if we consider the variable diffusibility of the drug; and the only attempt at estimating the percentage of vapour inhaled is contained in the vague statement that it was "given in every conceivable way," yet the Commission do not hesitate to draw important conclusions from administrations conducted under abnormal conditions, and apply them to ordinary and careful inhalations.

Next, as to the regulations for human administrations which the commission have drawn up. These are, to my mind, utterly inconsequent, utterly fallacious. I cannot possibly admit that any number of experiments upon animals ought to outweigh the results of prolonged clinical experience. As Mr. Braine very aptly remarked, one positive experience should and does invalidate a thousand or more experiments.

The Commission tell me that I ought only to watch the respirations, a dictum which appears to me at best, and upon whatever laboratory experiments it may be founded, about as scientific and rational as if the physician were directed to diagnose typhoid fever *only* by the temperature, or *only* by the presence or absence of the diarrhœa. They ask the profession to withhold their judgment until the details of their experiments have been published and fully considered, and express their hope that if errors have been made they will be set right *by-and bye*. At the same time they have not themselves hesitated to draw conclusions from their experiments, to give authority for opinions which are confessedly at variance with those usually taught by nearly all practical anæsthetists, and to revert to what I maintain was the erroneous teaching of some forty years ago. They do not appear to have reflected that, as far as human administrations are concerned, the only practical way by which they can be proved to be right or wrong is by watching the chloroform death-rate after their opinions have been promulgated. Surely a far better plan would have been to have submitted their results to criticism and discussion *before* expressing such emphatic opinions. The repeated reiteration of such an earnest (and apparently sincere) desire to arrive at the truth may appear to some as being almost an acknowledgment of a feeling of weakness—either in the constitution of the committee itself, or in the difficulty they have themselves experienced in endeavouring to reconcile the results of laboratory experiments with those of clinical experience. I must apologise for the length of this letter, but I feel that it is of vital importance to have the whole subject discussed as fully and freely as possible.—I am, Sirs, yours faithfully,

J. FREDK. W. SILK,
Anæsthetist to Guy's Hospital (Dental School), to the Great Northern Central Hospital, &c.

Chandos-street, W., Feb. 1890.

RELATIVE SAFETY OF ANÆSTHETICS.

To the Editors of THE LANCET.

SIRS,—As a contribution to the discussion raised by the report of the second Hyderabad Chloroform Commission,[1] the two cases of syncope during the administration of that anæsthetic which I bring forward are of considerable importance. The patients did not die, but it seems to me that the cases do not lose weight as evidence against Section 9 of the practical conclusions of the committee on that account. According to this section "the administrator should be guided as to the effect entirely by the respiration; his only object while producing anæsthesia is to see that the respiration is not interfered with." In neither of these cases could the symptoms be ascribed to shock from the operation, which was in each of a minor character. The symptoms developed some time after the administration of the chloroform had been commenced, suddenly and without warning. Both patients had been prepared, and the chloroform was given on a double layer of lint.

CASE 1.—J. A. S——, aged forty-five, was under the care of Sir W. Mac Cormac for chronic ulcer of the leg, which remained after various operations for the removal of necrosed bone. This necrosis was the result of a severe compound comminuted fracture of the tibia received in 1880. He had undergone operations previously, both in the hospital, at Guy's, and at Southampton, and had taken chloroform on more than one occasion without ill effect. On the evening of May 17th, 1883, the ulcer was scraped by the house-surgeon; his colleague, who had had experience in the giving of anæsthetics, administered the chloroform. As I entered the room, the lint with a fresh supply of chloroform was being again placed over the face, but *before it reached the face* there was a rapid change of colour, the lips and cheeks becoming of ashen hue. I placed my finger on the nearer wrist, but could feel no pulse, nor could any be felt on the right side. The chloroform was stopped; no cardiac impulse could be felt, *and the respiration, which had continued, now ceased.* Cold wet towels were used to splash the chest, and ice placed over the cardiac region, while artificial respiration was carried out. The pulse came back slowly, and resort had to be had to these remedies again, when he appeared nearly recovered, on account of relapse. He was almost conscious before an ether injection was given, and resented it.

CASE 2.—On April 14th, 1887, I was performing the operation of division of the right sterno-mastoid for congenital torticollis on a boy aged six, Mr. Mackellar having kindly given me charge of the case. After the patient was well under the influence of the anæsthetic, which was given by a qualified man, and as the division of the sternal attachment of the muscle was almost completed, the face of the patient became blanched, the pulse could not be felt at the wrist, nor could the impulse of the heart be felt. *The respiration was continuing, and had shown no signs of failure.* The pupils dilated. The tenotomy knife was immediately withdrawn, a finger placed over the puncture, the patient held up by the legs, and measures taken, as in the other case, to restore the circulation. For a time it seemed as if they would prove unsuccessful, but the pulse gradually returned, and the operation was completed.

A special note was made by me of the sequence of events in Case 1, and the fact that the respiration continued after the cessation of evidence of circulation caused much comment at the time. In the second case as I was facing the patient and my hands were steadied on the upper part of the boy's chest, the sudden pallor was very striking. The man was lying on his back with his head on a low pillow, the boy's shoulders were more raised and his head thrown back to place the muscle on the stretch. The man was alcoholic and had suffered from "rheumatics," but in neither patient was there evidence of heart disease. It is worthy of note that the boy, who had previously been dull and very dirty in his habits, became cleanly and more intelligent from this time. Had the lint been over the faces of these patients when the change of colour took place and so prevented its being seen, and the anæsthetist only taken warning when respiration ceased, it is probable that they would have failed to respond to treatment applied after the loss of valuable time. I feel convinced that treatment in such cases, to be of use, must be prompt and energetic. The occurrence of syncope in cases such as these has led me to advise close attention to the pulse as well as to the respiration, and oppose the performance of any other duty by the anæsthetist than close observation of the patient during the operation.

I am, Sirs, yours faithfully,

Harley-street, W., Feb. 17th, 1890. WILLIAM HY. BATTLE.

To the Editors of THE LANCET.

SIRS,—In Dr. Lauder Brunton's very interesting account before the Medical Society of the valuable experiments on Anæsthetics at Hyderabad, he is reported to have said that ether "could not be used in very hot climates." This assertion is somewhat too sweeping. I had the advantage of being Anæsthetist to the Base Hospital at Suakim during the campaign of 1885, and gave ether for every operation. On the day following the fight of Tofrek I was giving ether in the operating tent from early morning till nearly midnight, with only the short intermissions necessary for getting food.

[1] THE LANCET, vol. i. 1890, p. 149.

The temperature—always hot during the day—reached over 100° F. in the shade on some of the days in which I gave ether, and I never had any difficulty worth noting. The effect of this anæsthetic as a stimulant on the men suffering from exhaustion or shock was very marked, and helped many of them through the operation; it is therefore most valuable in military surgery. There is certainly the difficulty of keeping the ether when once the bottle has been opened, but this can be counteracted by the use of small bottles. Some short notes of mine on "Anæsthetics at Suakim" were published in the *Medical Times* for Nov. 7th, 1885. I am, Sirs, yours, faithfully,

Seymour-st., W., Feb. 18th, 1890. J. EDWARD SQUIRE.

OXFORD UNIVERSITY AND MODERN MEDICINE.

To the Editors of THE LANCET.

SIRS,—I believe that no person possessing any but the crudest acquaintance with the history of medical education in England and free from gross prejudice can fail to be impressed, instructed, and touched by the remarkable letter of Sir Henry Acland referred to in your leading article of Feb. 15th. This letter seems to me unique of its kind. It is not my intention to do more than refer to one or two points in connexion with it. In the first place, it must be granted that scientific and preliminary medical education at Oxford has hitherto received very little fostering care from the University, and that such care as has been granted has been the result of the foresight and affection of a very few men—chiefly of Sir Henry Acland. The more ancient faculties have, as is right and natural, taken precedence; and, as is natural, but not right, have taken a narrow view of those schools in the University which, properly following as a complement to them, should be regarded as younger offspring, to be carefully tended and reared. Much of this may be due to unfortunate controversies about religion and science, which simply have raised the dust, which time only and faith on both sides can lay, and which have represented science and religion (for the promotion of which the universities were founded) as deadly enemies, rather than as explorers of truth from different sides. Ponderous and timid apprehension, on the one hand, and juvenile irritability on the other, have resulted from this state of mind; and science, as the younger, less wealthy, and weaker, has been starved. The liberality of the University of Cambridge is in contrast with this, but yet it must be allowed that the Oxford Museum, with the scientific part of the Radcliffe Library under the same roof, and with its excellent physiological and chemical laboratories, leaves little to be desired.

The writer of the article speaks of the "medical school" of Cambridge as if it were something which Oxford had not. This word has been made a shibboleth, and is used in a variety of ways to suit various arguments. A complete medical school Oxford does not possess, or intend to acquire, unless it should violently and unexpectedly change its mind. The opportunities of such towns as Oxford or Cambridge for clinical work can never compare with those available in London for students; nor are the opportunities for clinical research and teaching ever likely to entice many really promising clinical teachers and practitioners to leave London for either. It is not too much to hope that men of wide views, great learning, and ample means may be found to occupy the Regius Professorship as they are required, but we are scarcely entitled to expect more than this.

A preliminary general culture, followed by a preliminary scientific training, should be available in Oxford and Cambridge, with a perfection scarcely to be found elsewhere; but it is this, and this alone, that we wish for. If this constitutes a "medical school," we have such a school, and it is increasing; if by a "medical school" is meant a complete medical school, Cambridge has it not, and, I believe, never intends to have it; for no man, I understand, expects to get at Cambridge the clinical knowledge necessary to pass his final examination at Cambridge; practically, all go elsewhere, mostly to London. "The success of Cambridge cannot be questioned," says the article, and I am the last to wish to detract from it; but it seems to me that it should be put on some better ground than that of numbers, which might be explained by various reasons, such as less prolonged curriculum, especially in general education, and consequently less expense. Curiously enough, the ancient Conservatism of Oxford has lately had grafted upon it a twig of Radical or even revolutionary character, which has endeavoured to grow rapidly, if not fiercely, and that is the attempt to attract men to the University simply as medical students. This would, in the opinion of all those best acquainted with the matter, be disastrous, not to the University so much as to men so attracted. Whatever prestige either University enjoys is the result of the calibre of the men whom she has sent out in the past, and has depended principally on the general culture, grafted on which any subsequent study has borne good fruit. In this respect Oxford has no need to blush before her sister University. Such a proposal as that above is simply an attempt to debase the coinage, which will inevitably recoil on itself, for gilded shillings cannot long pass as sovereigns.

One sentence in the article is beyond my understanding: "Unfortunately the Universities are still *licensing* bodies, and they compete with the corporations for the *licensing* of students who desire to practise." (The italics are not mine.) Against which University is this innuendo directed? It cannot be Cambridge, which meets with the writer's approval; it cannot be Oxford, which is so "narrow" that it does not make its curriculum easy enough. Can it be London? So far from thinking the universities less to be trusted than other bodies in this respect, I think their rights are not only the most ancient but the best deserved. I have hope in the future for Oxford, and believe that in many respects her policy, chiefly guided by her medical graduates, has been the most far-seeing and the most liberal of all. The only fear is that those interested in increasing the number of intending students of medicine should succeed in substituting for the present sound, if somewhat elaborate, course a rapid, cheap, and superficial curriculum. Our aim has been rather quality than quantity, and I hope it will remain so. No two universities are alike, and slavish copying of Cambridge will be far more likely to destroy the character of Oxford graduates than to attract numbers of desirable students. Moreover, it must not be forgotten that the present popularity of Cambridge is largely due to the work of two men—Professors Humphry and Michael Foster. I may add that the criticisms of Cambridge graduates are not always directed against their sister University.

I hope that Sir Henry Acland's letter will be widely read. The history contained in it is such as he alone of all men living could furnish, and it is full of serious thought for the future. I am, Sirs, your obedient servant,

Feb. 17th, 1890. M. D. OXON.

ANKYLOSTOMIASIS AND BERI-BERI.

To the Editors of THE LANCET.

SIRS,—The case of ankylostomiasis, to which you refer in THE LANCET of Feb. 1st, is very interesting, inasmuch it teaches once more the necessity of microscopical examination of the alvine dejections in certain cases of obscure diseases. Had that examination been made at first, when the gentleman referred to fell ill in India, he would have saved time, trouble, and money. But similar cases happen very often from the omission of that regular examination; I could quote many from my own practice both in Egypt and here, if I did not fear to occupy too much of your space. I will only add that in the last Congresso di Medicina Interna held at Rome last October, I communicated a paper in which I insisted on the importance of the examination of the excreta for the diagnosis and effective treatment of the diseases resulting from entozoa. But allow me also to refer to another point raised in your article. You say "that it is well known that beri-beri or some forms of it own this origin" (viz., ankylostoma). In my opinion this is not quite correct. Beri-beri is now well known as a kind of polyneuritis, endemic in many countries where ankylostoma too is frequently found. Now, it is clear that in those countries it happens frequently that this worm is found in individuals affected with that disease, but this is merely a coincidence. Indeed, there are countries (as Italy and others) of Europe where ankylostoma is common, but beri-beri is not found. There is no doubt that ankylostomiasis combining with beri-beri must greatly aggravate the case, as the anæmia induced by ankylostoma is added to the cachectic and anæmic condition proper of beri-beri. You will remember that beri-beri has been said to be dependent upon trichocephalus dispar. This statement, however, is not more accurate. As trichocephalus is a very frequent and widespread parasite

throughout the world, it has happened that it has been found very frequently at the necropsies of persons dead from beri-beri; but this, too, is only a coincidence. The symptoms of the anæmia induced by ankylostoma have nothing to do with the beri-beri disease, as I had reason to be assured both in Egypt and Italy. I had in Cairo a case in an apothecary of a form that closely resembled chronic beri-beri, in which I found filaria sanguinis. I gave a hint of it in my paper on filaria sanguinis &c., published in the *Medical Times and Gazette* of May 13th, 1882. But I am of opinion that the presence of the hæmatozoon in the beri-beri-like disorders was merely a coincidence, and that filaria sanguinis has no connexion with beri-beri any more than has ankylostoma or trichocephalus. Let me say also that I think the so-called African cachexia and Griesinger's Egyptian chlorosis cannot rightly be identified with ankylostomiasis, inasmuch as they are the combined result of different morbid conditions into which frequently, but not constantly, ankylostomiasis enters as an element.

I am, Sirs, very truly yours,

Pisa, Feb. 15th, 1890. P. SONSINO.

*** Dr. Sonsino's contribution to a vexed question is of much value. The alleged relationship between beri-beri (some forms) and ankylostomiasis was specially pointed out in the report on the former disease issued by the Ceylon Government in 1887, and noticed in these columns in our issue of Oct. 21st, 1887, p. 821.—ED. L.

DISEASE NOTIFICATION AND COMBINATION OF SANITARY DISTRICTS.

To the Editors of THE LANCET.

SIRS,—Whilst the main body of general practitioners will endorse the essential principles of the memorial to the Local Government Board and other authorities signed by the Chippenham doctors, but few will subscribe to the timorous threat contained in it. Powerful as a well-organised "strike" is, perhaps a matured consideration may bring the determination of these gentlemen to a different issue—consonant with the spirit of the Act of Parliament which has excited their protest, and to the accomplishment of the principle they seek to establish.

Without further criticism of the memorial I venture to think that, apart from their ultimatum, yet attaching due weight to their arguments, the Chippenham doctors have initiated a movement for the combination of sanitary districts for purposes of medical officer of health administration which should become general in the country. The most useful protective measure of notification has now been adopted by sanitary authorities for fully three-fourths of the population of this country. Good as this is in principle, in practice it is to be feared that many causes may shear it of the success which should attend its application. First, amongst these is what has found expression in the Chippenham memorial, and the natural jealousies (by no means of necessity unfriendly) which prevail amongst rival practitioners in regard to their respective patients. And next may be noticed detail in routine, by which failure may likely occur. Such may be instanced in that a defined infectious disease may break out in a house, and its existence may be known, and continue there unreported to the medical officer of health. Or a medical man may be in charge of such a case and yet it may be unreported. For omissions of this kind the Notification Act imposes penalties; but the Act does by no means so clearly say who is to set a prosecution on foot for the recovery of these penalties. In the prescribed duties of medical officers of health it is not laid down that such officers should do such work as that of common informers, but, rather, that they should act as advisers of the authorities engaging them. The medical officer of health, however, is or should be the chief moving spirit in the public health affairs of his district, and obviously may be expected to appear in the initiative in the proceedings of his authority.

The disagreeables of differences of opinion, of friction in administration, and especially of litigious differences, require no comment. Occurring amongst neighbours and professional brethren, their prejudicial influences upon the social and professional standing and worldly success of one whose misfortune it may be to have to participate in such is too obvious. The expectation, then, is that in those districts in which the medical officers of health are paid insignificant salaries, ranging from £10 to £100, and in which the development of private practice is the object aimed at by the officers as a means of livelihood and money-making, so long as notification (like former sanitary administration) works without pressure, it will continue to do so, but when pressure becomes necessary, then it will become overlooked, a failure, perhaps a dead letter. Comparisons of the sanitary histories of sanitary districts since 1872, and especially of small districts, too clearly point to this expectation.

With the experience that the Local Government Board have had of sanitary administration by local authorities, it is strange that the Notification Act should have been made optional in adoption by authorities. The small and what one may call "cheap" authorities have done but little in the way of, or have even resisted, sanitary improvements; their districts will doubtless profit in the same measure by notification. And yet the other districts which have been put into proper sanitary conditions and have adopted precautionary and preventive measures against the invasions of diseases are to be sacrificed to the whims of their inactive neighbours, and be exposed to risks from the neighbouring centres of infection and breeding-places of diseases. An anomalous form of legislation this is for the wrong-doer.

So far County Councils have shown no disposition to appoint medical officers of health. When they get flooded with reports from various medical officers of health they may awake to the necessity. It is said in some reliable political quarters that the Government, which has so far brought about local government in counties, will complete its scheme of local administration by the creation of District Councils. The time is at hand for the creation of these Councils. When the District Councils Bill is before Parliament it should be seen to that administrative measures which are now optional should be made compulsory; and that for administrative purposes proper combinations of sanitary districts should be made, to be placed under the charge of efficient and properly paid medical officers of health—such as the Chippenham memorialists demand for Wiltshire.

One word more. The common argument used against combination has been that of expense. To overcome this I would suggest to the "powers that be" that no additional rating expense need be incurred on account of salaries. Whilst combining sanitary districts, other appointments which bear upon public health (and which of course carry emoluments) should also be combined under the medical officer of health. Such offices would be those of the certifying factory surgeon, the superintendent registrar of births and deaths, and that of the coroner. The combination of such existing salaries with those of present ones given to medical officers of health would provide adequate salaries for medical officers of health appointed to any districts which might be combined for sanitary and administrative purposes. Without combination progress in sanitation will come to a standstill; and notification will become a half measure, applicable chiefly to that section of the community whose domestic affairs the least require regulating, and in which the Chippenham memorialists most dread the interference of the competing medical officers of health.

I am, Sirs, your obedient servant,

J. LLOYD ROBERTS, M.B., D.P.H.

Denbigh, Feb. 7th, 1890.

"WHAT IS A 'STONE' IN THE BLADDER"?

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Feb. 15th Sir Henry Thompson calls attention to the fact that in the third Lettsomian lecture I have misrepresented his views upon the question as to what is the lowest weight admissible for a "stone" in the bladder. To my regret, I find that when reading his reply to Dr. Freyer (*Brit. Med. Jour.*, Feb. 18th, 1888), the words "in the adult" escaped my notice. (They were not, however, in italics, as quoted by Sir Henry Thompson last week.)

At the close of the correspondence which his original letter called forth, I was not the only surgeon who was left in the belief that Sir Henry would recognise nothing as a stone which did not reach his arbitrary standard of "twenty grains." The sentence which gave me that erroneous impression—which, indeed, seemed incapable of any other construction than that which I put upon it—was this: "Thus in my cabinet of calculi, now numbering about 950 cases removed by operation, *there is not one weighing less than twenty grains, and I have never accepted or reported an example beneath that weight as a 'stone.'*" (The italics are mine.) There is nothing to suggest that

Sir Henry had another cabinet for boys' calculi or a separate scale for weighing them.

Again, in his second letter (*loc. cit.*, July 21st, 1888), without making any exception for children, Sir Henry writes:—"To close a paper already too long, I think there is little doubt that the common sense of the profession will exclude a trifling concretion of two or three grains from taking rank under the well-known and time-hallowed term, 'a stone in the bladder.' In my own collection there is nothing less than twenty grains." If Sir Henry Thompson has, then, fixed the lowest weight for a man's calculus at twenty grains, what, I would ask, is to be the lowest weight acceptable in the case of a child or of an infant? This was the matter which interested the Lettsomian lecturer, and to it I do not think a satisfactory answer can be forthcoming. My contention is that any concretion which has to be removed by operation—no matter how small it may be—is a stone.

I think that Sir Henry must admit that he, a master of English, and speaking *ex cathedrâ*, should not have left the statement of his opinions in such a form as to mislead even a dull reader. That I have misrepresented his views there is no manner of doubt, and I beg that you will give me this opportunity of assuring him that I much regret it, though, at the time, I was speaking in perfect good faith.

I am, Sirs, truly yours,

Seymour-st., Feb. 17th, 1890. EDMUND OWEN.

OUTBREAK OF SMALL-POX AT CRESSING.

To the Editors of THE LANCET.

SIRS,—A serious outbreak of small-pox has occurred at Cressing, in the Braintree Rural Sanitary District, under somewhat unusual circumstances. The first case was reported to the sanitary inspector on Jan. 29th, and when visited that morning the patient was found in bed in the fourth stage of small-pox, the eruption being general non-confluent, suppurating. The man belongs to the sect called "Peculiar People," and had no medical adviser. A child of seven weeks occupied the same room at my visit. This child has since died of the hæmorrhagic variety of the disease. The patient had been visited by his employer and friends during the week preceding my visit, the affection being called "running erysipelas." From this cause the disease has spread to at least four other persons, one resident at White Notley. Some of the residents near the infected cottage have been revaccinated, and all the inmates of the cottage have been protected by revaccination. The case is now under the care of the district medical officer. In my capacity as the medical officer of health a nurse has been procured from London. This was done on Feb. 1st, and the usual precautions have been taken to prevent the spread of infection. No means of isolation exist in the rural or urban district, though I have urged the provision of such for the past eight years. The urban authority now, under the influence of panic, propose to set about providing means of isolating cases in the event of the disease spreading to the urban district. They propose to act jointly with the rural authority. The success of this plan and the further spread of the affection shall be communicated to you. The inhabitants have suffered extensively from the influenza epidemic, which is now on the decline.

I am, Sirs, yours faithfully,

C. E. ABBOTT, M.R.C.S., L.K.Q.C.P.I.,
Medical Officer of Health, Braintree Urban and
Braintree, Feb. 11th, 1890. Rural Districts.

*** Whilst we would not incur the responsibility of urging the two authorities mentioned above to postpone taking joint action as suggested, we would remind them that a hospital erected under the influence of a sudden emergency has never, to our knowledge, either properly served its immediate purpose or the future requirements of the district. Many such hospitals have never received a single patient attacked during the outbreaks for which they were erected, and nearly all have been of such a sort as to hinder rather than favour isolation after the emergency has passed. If a house is available, it might be temporarily made into a hospital; but a new construction should, if it is to succeed, be made deliberately and uninfluenced by panic. In the case of small-pox much can fortunately be secured by vaccination.—ED. L.

EFFECTS OF THE ELECTRIC CURRENT WHEN APPLIED TO THE FEMALE PELVIC ORGANS.

To the Editors of THE LANCET.

SIRS,—Under the above heading Dr. McMordie, in your issue of Jan. 11th, says he has instituted some experiments to show the effect of the electric current on uterine hæmorrhage and fibroids. His experiment was as follows:—He got a one-celled electric battery, and for some months made a series of observations on the effects produced in uterine hæmorrhage and on fibroid tumours. He applied it as follows: One pole attached to a conductor in the form of a uterine sound in the uterus and the other to a flat conducting surface placed over the abdominal parietes corresponding to the fundus uteri. He tells us that this had no effect on the fibroids, even after frequent applications; its effect upon the hæmorrhage he does not state. I therefore presume that also was *nil*. Now, it is a fair question to ask, What effect did he expect to produce? Did he for a moment think he was testing Apostoli's methods, as in a previous sentence of his paper he says, "The facts adduced and proved by Apostoli and others who have been engaged in these experiments are very few." It is a legitimate conclusion that Dr. McMordie's experiment was to test the value of Apostoli's methods. Dr. McMordie's one-celled battery at the outside possessed an electro-motive force of 1·5 volts, and, leaving out the resistance the current would have to encounter in the conductors and electrodes, the body alone would offer a resistance of between 4000 to 6000 ohms. According to the well-known law of Ohm, the electro-motive force of such a battery meeting such a resistance would give in current intensity the merest fraction of a milliampère. Now, when we know that the arrest of hæmorrhage or any effect to be produced on a fibroid depends on electrolysis, or, as Apostoli expresses it, of chemical galvano-caustic action produced by a current having an intensity of from 60 to 250 milliampères, necessitating the employment of a battery of 30 to 50 cells, one sees the absurdity of such an experiment as Dr. McMordie's. Moreover, I have yet to learn that electricity according to Apostoli's methods has ever been used to produce the extrusion of a uterine fibroid; such a result is exactly what we wish to avoid. The shrinkage of the tumour is the result aimed at. I would recommend Dr. McMordie in his next experiment to leave out of the circuit altogether his one-celled battery, and I have no doubt he will achieve the results he describes.—I am, Sirs, yours faithfully,

Cromer, Jan. 1890. HENRY M'CLURE.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Royal Southern Hospital.

AT the annual meeting of the Royal Southern Hospital, held on the 18th inst., the committee gratefully acknowledged the gift by Dr. Cameron of a pathological laboratory to adjoin the new post-mortem room. Dr. Alexander had also offered a scholarship of £20, open to students in microscopic and bacteriological researches; Dr. Carter a prize of £5 for the best series of clinical reports; and Mr. Robert Jones a similar prize for the best series of clinical surgical reports. These generous gifts from members of the medical staff, in addition to their other valuable services, are thus fully acknowledged. It was also stated that the horse ambulance had been used in 344 cases, and that a friend had borne the cost of affixing rubber tires to the wheels, which would afford much ease to those conveyed in it.

Death of Thomas Dale, L.R.C.P. Edin. & M.R.C.S.

Mr. Thomas Dale, who died on the 16th inst., was a native of Moor in Cheshire. He came to Liverpool at an early age and received his medical education at the local school of medicine. After obtaining his diplomas he commenced practice here, and for many years enjoyed a very considerable practice, obtaining much reputation as an accoucheur, and attending a very large number of obstetric cases. He was a prominent member of the Wesleyan Methodist body, and a regular attendant at the Brunswick Chapel, near which he resided. He was in his sixty-sixth year, and, being in failing health, he in May last

consulted Dr. W. Carter, under whose care he remained. On Saturday serious symptoms set in, and on Sunday he breathed his last. He leaves a widow and several children to mourn his loss, and many old fellow-students and professional friends will learn of his death with regret, he having always been distinguished by his genial disposition and pleasant manners.

The Eye and Ear Infirmary Post-graduate Class.

Mr. Edgar Browne's lectures on ophthalmoscopy are largely attended. Bearing in mind those details which are most practically useful to general practitioners, the subject is treated from this point of view. An ample supply of interesting cases has been furnished from the out-patient room, and the gentlemen attending the class have had the opportunity of studying some rare diseases as well as the normal condition.

Liverpool, Feb. 20th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Queen's College and Durham University.

IT has been a cherished idea for some time past that the students of Queen's College should be able to present themselves for examination at Durham without the previous necessity of residence at the University. A deputation from the Council went to the Northern University some weeks ago and interviewed the authorities there, with the view of ascertaining if and how this could be arranged. Their hopes are now at a discount, and, for the present at all events, the end they sought to obtain is nowhere in view. The following communication has been received: "The Senate of the University regret that the time does not appear to them to have arrived when it would be desirable to affiliate the medical department of Queen's College with the University, especially as the connexion of the medical colleges with universities is now the subject of a Parliamentary report, the proposals of which have not been considered."

Infant Mortality at Warwick.

At a meeting of the Warwick Town Council an important report by Dr. Wilson, the medical officer of health, was presented on this subject. From a return of the death certificates granted by the registrar in cases of infant life insurance, it appeared that eleven of these certificates were given for deaths of infants insured under one year of age and eleven for deaths of children over one and under five years. In the discussion which followed it was suggested that the charities of the borough should be placed under one representative body, so as to aid in preventing abuses which fostered the tendency to their indiscriminate use; that the laws of health should be taught in the elementary schools, and that medical men should refuse to give certificates in cases where they had reason to believe that there had been parental neglect. When these good objects are carried out I shall expect to see Warwick a model borough, and the infants thriving under the protection of such auspices.

Singular Provision of Will.

The late Colonel Vyner, of Leamington, in his will made a curious bequest, that £10 be given to his regular medical attendant to personally examine him after his death, and certify in writing to the executors that he was really and undoubtedly dead, and the doctor was authorised to use whatever means he might think fit to make himself absolutely certain of the death of the testator. The horror of being buried alive is not uncommon, though the expression of it in this practical form is rare.

The Post Office Medical Staff.

Mr. George Jones, who for twenty-seven years has held the appointment of medical officer to the local post-office, has just resigned his appointment. The Postmaster-General has sanctioned the creation of five districts, to each of which a medical officer has been appointed, and it is thought that this plan will conduce to the interests of the *employés*, and render the work more advantageous to all concerned.

Birmingham, Feb. 19th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Influenza in Newcastle and Districts.

IT is stated in to-day's papers that the influenza extends from Tynemouth in the east to Carlisle in the west, from Berwick in the north to Durham in the south. One colliery owner alone has 500 men away from work from this cause, and this will make a difference in the production of about 1000 tons a day. There is scarcely a school of any size in Newcastle where most of the teachers and scholars have not been attacked, and there is scarcely a medical man in Newcastle or Gateshead who has escaped an attack personally or in his household. Some curious facts are coming out as to its mode of propagation; for instance, in one dispensing establishment, employing eighteen assistants, the managing partner remarked that of his nine assistants at the front counter all but one were attacked in turn, but of the nine others in the same shop who did not serve customers all escaped. Some very sudden and fatal cases of pneumonia have taken place within the last few days consequent on the influenza wave which is now passing over us. I regret to note the death from this cause on the 8th inst. of a very promising student, Mr. Charles Henry Humble, who succumbed after three days' illness. Mr. Humble, who was only in his twenty-second year, had passed his first and second M.B., and was a diligent student, losing no opportunity of improvement in his profession. He was an only son, and his funeral at Sunderland on Wednesday was attended by many of his classmates and teachers, who deeply regretted his early death.

Newcastle Hospital Sunday Fund.

The final lists of collections for this Fund are out, and show that the amount collected is the largest aggregate yet reached. Under both heads it amounts to £4205. In places of worship the collections amounted to £2080, against £1956 last year. The collections from factories and workshops reached the very satisfactory amount of £2124, being £320 more than last year. The workmen's subscriptions have for this year exceeded those of the churches and chapels, and altogether there is an improvement of £445 upon the total of last year.

Newcastle Chest Hospital.

The annual meeting of the Northern Counties Hospital for Diseases of the Chest has been held, and the report shows that this charity has, as far as its means allowed, been of great use in the city. There had been 758 out-patients, and 28 had been treated in-doors. The financial position was good, but its efforts were greatly cramped for want of room.

Durham.

The financial position of the Durham Samaritan Society is satisfactory, the annual report showing that it had nearly £100 to carry forward. This favourable state of affairs is stated to be due to the proceeds of a conversazione held in the Durham Town Hall. The Society had relieved 411 patients of the County Hospital during the year, and its nurses had paid over 700 visits in a year marked by much sickness in the city, caused (the report says) by the insanitary and overcrowded condition of many of the dwellings.—The University of Durham Medical Society's ball was held last week in Newcastle, and passed off as a brilliant success, the company numbering upwards of 500.

The late Mr. John Hope.

A handsome stained-glass window has just been placed in St. Andrew's Church, Newcastle, as a memorial of the late John Hope, M.R.C.S., of that city. The window has been erected by a few friends. Mr. Hope's early death at Grange-over-Sands a few years ago, followed in less than a year by that of his young widow, will still be remembered by many of your readers. Mrs. Hope is also commemorated in this window.

Newcastle-on-Tyne, Feb. 18th.

TUNBRIDGE WELLS HOSPITAL.—The sixty-first annual report notices the satisfactory condition during the last year in the three main sources of income—viz., the subscriptions, donations, and collections,—the total amounting to £2169 0s. 5*d*. The number of in-patients (454) was the largest admitted in any one year.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

EDINBURGH.

Edinburgh Medico-Chirurgical Society.

THIS week the first of a series of discussions is to be opened at the meeting of the Edinburgh Medico-Chirurgical Society. Dr. Strachan is expected to lead off with a paper on the Physiology of Education, a full report of which will probably be published in the *Edinburgh Medical Journal*. A number of physiologists and educationists will take part in or benefit from the discussion; and it is to be hoped that the outcome will not be similar to that recorded of the article on Chinese Metaphysics, the author of which based his observations on two other articles in the same Encyclopædia—viz., China and Metaphysics. If the subject is tackled rationally and fairly, nothing but good can be the result of the discussion of such a subject, especially when discussed from the different standpoints of the physiologist and the educationist. The next of the series of special discussions is to be on the recent influenza epidemic. There are certainly plenty of data on which to work; but how far any valuable general deductions will be obtained still remains to be seen. Whatever may be the result of the discussions, the subject itself will be a popular one, as many members of the Society who do not usually participate in the work of the meetings will feel quite competent to discuss a disease they have so recently had such ample opportunities of studying.

County Councils and Medical Officers of Health.

During the last few days the columns of the local papers have been the media for the airing of a subject in which the health of the community is very closely concerned. There can be little doubt that it is opposed to the best interests of the community and against the sound administration of the Public Health Act to allow private practitioners to hold the post of medical officer of health. The permission to continue in private practice is merely an excuse on the part of the County Councils to cut down to as low a point as possible the remuneration for the performance of the duties of public medical officer. Every medical officer of health who has had experience of private practice knows how difficult, or even impossible, it is for anyone combining the two functions to carry out the necessary reforms. In his lectures on public health Dr. Littlejohn, it may be remembered by his students, used to insist that the interests of a private practitioner and those of the medical officer of health, although actually the same, are nominally different; that the hands of the latter are practically tied; and in many cases he feels that his public duties may interfere with his private practice, or his private practice with his public duties. If the salary be small, the work of the office must suffer in the interests of private practice; and if it be large, it should be large enough to enable him to live without having on his shoulders the cares of private work. It would of course be necessary to combine, in some cases, several of the counties or districts; but there is no doubt that an ideal public health service is that in which the remuneration offered is sufficient to ensure the application of thoroughly trained men for the various appointments. In no country are there more sanitary experts, thoroughly well trained, than there are in Scotland at the present time, and it would be a great pity were these to be lost to the service of the public.

The Edinburgh New Town Dispensary.

It is a matter of considerable regret that this, the famous "N. T. D," is likely to be crippled somewhat from the diminution in the subscription list, with an increased number of patients during the year to the extent of 600. It is certainly to the interest of the Edinburgh Medical School that such a capital field as this dispensary affords for clinical students should not be allowed to languish for want of funds, as with nearly 7000 patients in attendance at the dispensary during the year and nearly 2000 attended at their own homes, there is scope for clinical work such as cannot be obtained in a hospital, and which is of immense value to the student whose future work lies chiefly amongst such patients. Whatever may be the cause of the falling off of subscriptions, every effort should be made to increase them in future years. Dr. Stockman, Lecturer on Materia Medica, Minto House School of Medicine, has been chosen to fill the vacancy in the staff of medical officers in the institution.

The Weather.

Mr. Lindsay, the curator of the Royal Botanic Garden, reports that during January the weather has been unusually mild, and that vegetation at the end of the month was considerably in advance of what it was at the same period last year. During the past week, however, very changeable weather has been experienced in Edinburgh. The death-rate is still high, 27·88 per 1000, or 10 per 1000 more than during the corresponding week of last year.

The late Nurse Porter.

The high respect in which the late Nurse Porter was held was evidenced by the large attendance at her funeral on Thursday afternoon. The funeral service was held in the Infirmary Chapel, when there were present Professor Annandale, Surgeon-Major Fasson, Dr. Catheart, Dr. Affleck, Professor Chiene, the residents in the infirmary, a number of nurses, and many others. Nearly the whole of the surgical staff and several from the medical side of the house, with a number of senior students, joined the procession to the Grange Cemetery.

Edinburgh, Feb. 18th.

ABERDEEN.

Health of the City.

DURING last week the following cases of zymotic diseases were notified to the medical officer of health—viz., measles, 16; scarlet fever, 2; diphtheria, 2; typhoid fever, 5; and whooping-cough, 39. In his report for the month of January, Dr. Hay states that the mortality for the month was unusually high. Among the aged the death-rate was higher than it had been for many months. As compared with the mortality in the same month during the previous ten years, the total death-rate (26·19 per 1000) during the last month was higher by 2·9 per 1000 than the average, and had been exceeded only in 1881 and 1883. The death-rate from diseases of the respiratory organs was greatly above the average, as was that from miasmatic diseases. This is said to be due chiefly to influenza, typhoid fever, and measles. The mortality from tubercular diseases was the lowest on record. Eleven deaths from influenza were reported during the month; three were outside the municipal area. The ages of the persons that died ranged chiefly between twenty-four and fifty-seven years. The disease was complicated in eight cases with inflammation of the lungs, in one case with diarrhœa, in another with senile debility. The duration of the illness varied from three to twenty-two days, but was mostly under a week. Dr. Hay says: "It is interesting to note that in January, 1881, when, as already mentioned, the mortality from respiratory diseases exceeded even that of last month, influenza was not prevalent nor was any other zymotic disease unusually abundant; but the mean temperature of the month was nearly 10° below the average, and was the lowest ever chronicled for the same month or any other month in all recorded years. The excessive cold, therefore, was in 1881 the apparent cause of the high mortality. No such cause existed during last month, for the weather was exceptionally mild and equable.

Air Space in Lodging-houses.

At a recent meeting of the Public Health Committee of the Town Council, the sanitary inspector submitted a representation suggesting that the rules regarding common lodging-houses be altered so that 400 cubic feet of air space, in place of 300, as at present, shall be provided for each person over eight years who sleeps in these houses. It was stated that in Edinburgh and Dundee this provision is in operation, and Glasgow is about to promote a Bill making it compulsory in dwelling-houses of all kinds. The Committee resolved to recommend the Council to apply to the Board of Supervision to sanction the change.

Aberdeen, Feb. 18th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

DUBLIN.

South Dublin Union.

AN election for a medical officer to the Peter-street Dispensary, consequent on the resignation of Dr. C. F. Moore, took place last week. There were thirteen candidates for the post, Dr. Cope being ultimately successful by a majority of eight votes. The emoluments are about £180 per annum.

Mullingar District Lunatic Asylum.

There are at present in this institution 584 patients, a number in excess of the ordinary accommodation, amounting to 152. The asylum is, therefore, overcrowded by fully 30 per cent.; but notwithstanding, the inmates, according to a recent report of Dr. Nugent, Inspector of Lunatic Asylums, are as a body comfortably circumstanced. It is a matter of regret that up to this so little progress has been made in constructing the proposed addition to the asylum, but Dr. Nugent has promised to bring the matter under the prompt consideration of the Board of Control.

Infectious Diseases (Notification) Act.

The Cork Corporation, at a recent special meeting, acting as the Cork Urban Sanitary Authority, have unanimously adopted the Infectious Diseases (Notification) Act, 1889. The Act will come into operation on April 1st, and its provisions will apply to the Cork Urban Sanitary District; all notices and certificates of infectious disease are to be sent to the Medical Superintendent Officer of Health. As institutions which receive cases of infectious diseases are not bound to report in accordance with the Act, the two institutions in Cork which admit patients suffering from diseases of this nature have been requested by the Town Council to co-operate with the corporate offices.

Barrington's Hospital, Limerick.

The annual ball in aid of this hospital was held in the Athenæum last Friday, and was well attended. It is believed that, as a result, a very substantial addition to the funds of a deserving charity has been obtained.

The late Sir Robert Kane.

On Tuesday last the remains of Sir R. Kane, who died the previous Sunday, were interred in the family vault at Glasnevin. The funeral was largely attended by members of the learned professions. Representatives were present on behalf of the College of Physicians, Royal Irish Academy, Royal University of Ireland, University of Dublin, &c.

Death of George W. Hatchell, L.K.Q.C.P.I.

This gentleman died on Wednesday at his residence in Dublin, aged eighty years. For thirty years he acted as Inspector of Lunatic Asylums in Ireland, and only resigned office last year. He acted as physician to the Vice-regal household for upwards of half a century.

Dublin, Feb. 19th.

BELFAST.

The Royal University.

The President of Queen's College, Belfast (the Rev. Thos. Hamilton, M.A., D.D.), has been appointed a senator of the Royal University, in room of the late Right. Hon. A. M. Kavanagh. At the last meeting of the Senate of the University two teachers of the Belfast Medical School were reappointed examiners: Dr. Byers in Midwifery and Dr. Whitla in Materia Medica.

The Thompson Memorial Home, Lisburn.

The fifth annual meeting of the committee and trustees of this Home was held on Feb. 10th. This institution, which is for incurables, was erected in memory of the late well-known Dr. Thompson of Lisburn, by his daughter, Mrs. Bruce, and his son-in-law, Mr. Bruce, D.L., of Belfast. The latter, who presided, said that the total income from investments, bank interest, and refunded income-tax was £1849 8*s.* 7*d.* for the year, but that the outlay exceeded this sum by £32 9*s.* 4*d.* The daily average of patients during the year in the Home was fifty-six, and the cost per head was £33 4*s.* 5*d.* They were aware, Mr. Bruce said, that the General Committee had empowered the Board of Management to admit sixty patients, and in order to give the Board ample means to support an increased number of people he had been requested by his wife to present the trustees with £4000. A very hearty vote of thanks was passed to Mrs. Bruce, who has given altogether £79,000 for the building and endowment of the Thompson Memorial Home.

The Belfast Medical Students' Association.

The annual conversazione, under the auspices of this Society, was held in Queen's College on Feb. 12th, and was in every respect a great success. This was the second social réunion of the Society, which has an existence of three years, and the object of which is to promote the interests of local medical students as regards their professional training. The President of Queen's College, several of the Professors and Teachers in the Medical School, and an immense number of the public were present. The College halls were very artistically decorated, and the general arrangements were most admirably carried out by the committee. After tea a number of interesting experiments with soap bubbles were shown by Professor Letts in the chemistry room, and through the kindness of Professor Everett a variety of apparatus used in teaching natural philosophy was exhibited in his class room. At nine o'clock the company crowded the great hall of the College, where a very fair concert was given by several well-known musical amateurs. The last and most amusing of the entertainments at the conversazione was the performance of Artemus Ward's new wax "Figgers," in which Dr. W. N. Watts made a capital showman and lecturer. Dr. McKisack took charge of the musical programme, Mr. Morrow the refreshments, and Mr. Hugh Heron, B.A., the popular secretary of the Association, had charge of the decorations.

Belfast, Feb, 18th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Bacteriology of La Grippe.

PROFESSOR JACCOUD made a very interesting communication to the Academy of Medicine last week on some cases of *la grippe* observed in his ward at La Pitié Hospital. The following was drawn up by Dr. Duflocq, his "chef de clinique." The number of patients amounted to forty-two, thirty-four men and eight women. In thirteen cases there was simple *la grippe* without any complication. Twice symptoms of intestinal catarrh were observed, seven times symptoms of simple bronchitis, six times pulmonary congestion, once capillary bronchitis, twelve times pneumonia or broncho-pneumonia, and once dry bilateral pleurisy. Two women who died had pneumonia with fibrinous exudation, and in one man capillary bronchitis supervened. In a case of capillary bronchitis, the pneumonococcus of Fraenkel and the microbe of Friedländer were found. In the cases of simple pulmonary congestion, pneumonococci were never found in the sputa. These results are analogous to those observed by Dr. Ménétrier, and described by him in his thesis in 1886. The presence or absence of the pneumonococcus in the sputa constitutes an important element of diagnosis between pulmonary congestion and pneumonia.

A Case of Erysipelatous Broncho pneumonia.

Dr. Mosny read a note on a case of erysipelatous pneumonia, in a woman aged thirty-seven, a domestic, who, while attending her master affected with erysipelas of the face, fell ill, and was sent to the hospital, presenting all the symptoms of primary pneumonia, without any morbid manifestation either on the skin or in the respiratory mucous membranes. The disease proved fatal, and at the necropsy the streptococcus erysipelatis was found in the exudation from the lungs. Three drops of a recent culture injected under the skin of the ear of a rabbit produced the ordinary experimental erysipelas, and it was concluded that this case was one of primary erysipelatous broncho-pneumonia.

Statistics of Insanity.

In a report to the Society of Medical Jurisprudence, Dr. Paul Garnier pointed out the alarming increase of mental affections in Paris. He stated that in the last fifteen years it had increased more than 30 per cent. The principal causes were alcoholism and intellectual strain. Mental aberration was a little more common in men than in women, the proportion being 56 men and 54 women out of 100 lunatics; but this proportion tended to become equalised, as the progression of insanity was more rapid in the female than in the male sex.

Chloride of Sodium and Wine.

The Consultative Committee of Public Hygiene, having been requested by the Minister of Commerce to give its opinion as to the proportions of the addition of common salt to wine that might be tolerated without having the effect of falsifying or deteriorating a natural wine, decided that, in any case, the quantity contained in the wine should not exceed one gramme per litre. Any infringement of this new law will be severely punished.

Foreign Medical Men and French Practice.

As the reciprocity of advantages appertaining to medical

qualifications has recently occupied the attention of the authorities on both sides of the Channel, it might interest your readers to know that the Minister of Public Instruction, in his report to the Commission appointed by the Chamber of Deputies to investigate the subject, expressed his opinion that reciprocity could not be admitted among nations whose diplomas and medical degrees were not of equal value. Foreign medical men should not practice in France unless they had obtained the diploma of Doctor of Medicine from a French faculty, after having undergone the final series of tests imposed on the students of medicine in this country. Foreign doctors who resorted to health stations on French territory would be exceptionally authorised to practise, but only among members of their own nationality.

Reciprocity in Medical Diplomas.

I have just received a circular from the Royal College of Physicians of London, in which are set forth the conditions on which French doctors may practise in England. These conditions ought to be translated into French and forwarded to the authorities and all the medical journals of this country.

Pasteur's Treatment of Hydrophobia.

Since Aug. 21st last—that is to say, during six months—850 persons bitten by rabid dogs have been treated at the Pasteur Institute. Of this number only one has died. These results are certainly very encouraging, and may be explained in different ways. In the first place, the patients generally apply much earlier for treatment, and there are also some modifications in the *technique* of the inoculations. For instance, the quantity of liquid injected is larger than formerly. Moreover, when the wounds are particularly dangerous, such as multiple and deep bites, bites in the face and on the skull, the spinal marrow of the most virulent character is injected on two consecutive days.

Hypnotism and the French Army.

Owing to the abuse of hypnotism in certain quarters, the Minister of War has interdicted the military medical officers from practising it in the Army.

Paris, Feb. 19th.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN twenty-eight of the largest English towns 6103 births and 4723 deaths were registered during the week ending Feb. 15th. The annual rate of mortality in these towns, which had been 22·8 and 23·0 per 1000 in the preceding two weeks, further rose last week to 25·3; the rate was 21·3 in London and 28·7 in the twenty-seven provincial towns. During the first seven weeks of the current quarter the death-rate in the twenty-eight towns averaged 25·1 per 1000 (it was 26·1 in London and 24·6 in the twenty-seven provincial towns), and was 1·5 above the mean rate in the corresponding periods of the ten years 1880–89. The lowest rates in these towns last week were 21·3 in London, 21·7 in Derby, 22·3 in Bradford, and 22·8 in Brighton. The rates in the other towns ranged upwards to 33·1 in Wolverhampton, 33·8 in Bolton, 34·4 in Plymouth, and 38·6 in Manchester. The deaths referred to the principal zymotic diseases, which had been 328 and 345 in the preceding two weeks, further rose last week to 419; they included 189 from whooping-cough, 67 from diphtheria, 53 from scarlet fever, 49 from measles, 31 from "fever" (principally enteric), 30 from diarrhœa, and not one from small-pox. No death from any of these zymotic diseases was recorded during the week in Norwich, whereas they caused the highest death-rates in Manchester, Salford, and Bolton. The greatest mortality from whooping-cough occurred in London, Hull, Bristol, and Bolton; and from measles in Liverpool. The death-rate from scarlet fever and from "fever" showed no marked excess in any of these great towns. The 67 deaths from diphtheria in the twenty-eight towns included 39 in London, 4 in Liverpool, 4 in Manchester, 4 in Salford, 3 in Preston, 2 in Bolton, 2 in Sheffield, and 2 in Hull. No death from small-pox was registered in any of the twenty-eight great towns. Five cases of this disease were under treatment on Saturday last in the Metropolitan Asylum Hospitals, and one in the Highgate Small-pox Hospital. The number of scarlet fever patients in the Metropolitan Asylum and London Fever Hospitals further fell last week to 1265, from numbers declining in the preceding six weeks from 1609 to 1297; 63 cases were admitted to these hospitals during the week, against 99 and 75 in the preceding two weeks. The deaths referred to diseases of the respiratory organs, which had declined in the preceding five weeks from 1069 to 485, further fell last week to 439, and were 86 below the corrected average. The causes of 118, or 2·5 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Sunderland, Portsmouth, and in four other smaller towns. The largest proportions of uncertified deaths were registered in Huddersfield, Blackburn, Cardiff, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the preceding five weeks from 29·0 to 25·0, rose again to 28·7 in the week ending Feb. 15th; this rate exceeded by 3·4 that which prevailed during the same week in the twenty-eight English towns. The rates in the eight Scotch towns ranged from 18·8 in Perth and 22·5 in Leith to 31·6 in Aberdeen, 32·5 in Glasgow, and 34·4 in Paisley. The 742 deaths in the eight towns showed an increase of 96 upon the number in the previous week, and included 34 which were referred to measles, 29 to whooping-cough, 10 to diarrhœa, 8 to "fever" (typhus, enteric, or ill-defined), 8 to diphtheria, 6 to scarlet fever, and not one to small-pox. In all, 95 deaths resulted from these principal zymotic diseases, against 90 and 85 in the preceding two weeks. These 95 deaths were equal to an annual rate of 3·7 per 1000, which exceeded by 1·5 the mean rate last week from the same diseases in the twenty-eight English towns. The fatal cases of measles, which had been 36, 18, and 24 in the previous three weeks, rose again last week to 34, of which 18 occurred in Edinburgh and 12 in Glasgow. The 29 deaths from whooping-cough corresponded with the number in the previous week, and included 13 in Glasgow, 9 in Edinburgh, and 5 in Dundee. The 8 deaths referred to "fever," of which 4 were returned in Glasgow and 2 in Aberdeen, also corresponded with the number in the previous week. Of the 8 fatal cases of diphtheria, 4 were returned in Edinburgh and 2 in Glasgow. The 6 deaths from scarlet fever showed a decline of 7 from the number in the previous week, and included 2 in Glasgow and 2 in Leith. The highest death-rates from the principal zymotic diseases last week were 4·0 in Leith and 6·9 in Edinburgh. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 187 and 162 in the preceding two weeks, rose last week to 195, and exceeded by 77 the number returned in the corresponding week of last year. The causes of 85, or nearly 12 per cent., of the deaths registered in the eight towns were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 48·8, 43·5, and 33·4 per 1000 in the preceding three weeks, rose again to 37·8 in the week ending Feb. 15th. During the first seven weeks of the current quarter the death-rate in the city averaged 41·5 per 1000, the mean rate during the same period being 26·1 in London and 27·3 in Edinburgh. The 256 deaths in Dublin last week showed an increase of 30 upon the number in the preceding weeks; they included 5 which were referred to measles, 5 to "fever," 1 to whooping-cough, 1 to diarrhœa, and not one either to small-pox, scarlet fever, or diphtheria. Thus the deaths from these principal zymotic diseases, which had declined from 24 to 12 in the previous three weeks, were again 12 last week; they were equal to an annual rate of 1·8 per 1000, the rate from the same diseases being 2·5 in London and 6·9 in Edinburgh. The fatal cases of measles, which had been 1 and 2 in the preceding two weeks, further rose to 5 last week; the 5 deaths referred to "fever" (typhus, enteric, or ill-defined) were within one of the number recorded in the previous week; and the mortality from whooping-cough showed a further decline. The deaths referred to influenza, which had been 6 and 7 in the preceding two weeks, were again 7 last week. Four inquest cases and 5 deaths from violence were registered; and 44, or nearly one-fourth, of the deaths occurred in public institutions. The causes of 44, or more than 17 per cent., of the deaths in the city were not certified.

Obituary.

SIR ROBERT KANE, F.C.P., F.R.S., M.R.I.A.

AFTER a short illness Sir Robert Kane died at his residence, Wellington-road, Dublin, on Sunday last, at the mature age of eighty. This distinguished chemist and illustrious Irishman pursued his medical studies at the Meath Hospital and Trinity College, where he graduated in Arts in 1835. In the following year he visited Germany and worked under Liebig, and in 1840 under Dumas of Paris. He obtained the licence of the College of Physicians in 1832 and the Fellowship in 1841. Prior to this latter date he lectured on Chemistry, and examined in the same subject at the Apothecaries' Hall of Ireland. He also held the post of Professor of Natural Philosophy at the Royal Dublin Society from 1834 to 1847, and in the last-named year was awarded the Cunningham gold medal by the Royal Irish Academy for researches on "Ammonia Compounds," and in 1840 the medal of the Royal Society for a paper on the Colouring Matters of Lichens. For some years he acted as President of the Queen's College, Cork, but resigned that position in 1873. He was knighted in 1846, and appointed in the same year one of the Irish Relief Commissioners, and in 1875 was elected a member of the Academic Council of the University of Dublin, and the following year President of the Royal Irish Academy. The deceased published in 1842 "The Elements of Chemistry," and two years afterwards an important work on the "Industrial Resources of Ireland." Sir Robert Kane was an LL.D. of the University of Dublin, a Justice of the Peace, and a member of many scientific societies.

THE SERVICES.

ARMY MEDICAL STAFF.—Surgeon-Major William Taylor, M.D. (ranking as Lieutenant-Colonel), to be Brigade Surgeon, vice T. H. White, M.D., retired (dated Feb. 5th, 1890).

MILITIA MEDICAL DEPARTMENT.—Surgeon-Major J. W. Cavanagh, 3rd and 4th Battalions, the King's (Liverpool Regiment), resigns his commission; also is permitted to retain his rank, and to wear the prescribed uniform on his retirement (dated Feb. 19th, 1890).

ADMIRALTY.—The following appointments have been made:—Fleet Surgeon Thos. H. Atkinson, to the *Wildfire*, additional, temporarily (dated Feb. 17th, 1890); Fleet Surgeon Henry D. Stanistreet to the *President*, additional, temporarily (dated March 3rd, 1890), and then to Royal Victoria Yard, Deptford (dated March 26th, 1890); Staff Surgeon Alfred Patterson to the *Vivid*, temporarily (dated Feb. 15th, 1890); Surgeon Sidney H. Youel to the *Pigeon* (dated Feb. 18th, 1890); and Mr. Thomas Hope Lewis to be Surgeon and Agent at Auckland, New Zealand (dated Feb. 17th, 1890).

Medical News.

UNIVERSITY OF DUBLIN.—At a meeting of the Senate held on the 18th inst. the following degrees were conferred:—

Bachelor in Medicine.—George Hollies.
Bachelor in Medicine, Surgery, and Obstetrics.—David North Emerson, John Neilson Eustace, Francis Turnley Gage, Theophilus Percy Jones, Alfred Vigne, Joseph Charles Worthington.
Doctor in Medicine.—Alan Bell, George Hollies, Robert Henry Johnston, Joseph Charles Worthington.

THE SANITARY INSTITUTE.—At a meeting of the Council held on the 12th inst., Sir Douglas Galton, K.C.B., F.R.S., in the chair, an invitation was received from the Town Council of Brighton inviting the institute to hold its annual congress and exhibition in that town in the autumn.

CEYLON CENTRE OF THE ST. JOHN AMBULANCE ASSOCIATION.—The report of this Centre shows that forty-two men and forty-seven women passed the examination for "first aid," and twenty-six women qualified for the nursing department, during the past year. The committee expressed their appreciation of the energy and zeal of the medical officer, Dr. Lees Hall. The Centre is altogether in a flourishing condition.

DOWNPATRICK WATER-SUPPLY.—An inquiry has been held by the Local Government Board as to the propriety of assenting to a petition of the Downpatrick Board of Guardians for a loan of £10,500 for the purpose of providing a proper supply of water for that town. Drs. Maconchy and Nelson have given evidence that the present supply of water is of bad quality. The drainage area will comprise 360 acres.

CAVENDISH COLLEGE, CAMBRIDGE.—An examination will be held on July 8th and following days at which one scholarship of £50 and six of £30 will be offered for competition to candidates who have not commenced residence and who will be under eighteen years of age on Oct. 1st. One or more of the following subjects may be offered for examination:—Classics, mathematics, natural science, modern languages. Particulars may be obtained from the Master.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—Sir Hedworth Williamson, in the presence of a large assembly, opened, on the 8th inst., the new ward and extensions of this hospital, which consist of a ward, an operating room, and connecting corridor, rendered necessary by the large increase in the number of accident cases treated at the institution. The ward is named the Canon Miles Ward, in honour of the late rector of Monkwearmouth, who had always taken great interest in the hospital.

METROPOLITAN HOSPITAL SATURDAY FUND.—At a special meeting of delegates, held on Saturday last, resolutions were adopted to the effect that, the Hospital Saturday Fund being incorporated under the Companies Act, all property belonging to or held in trust for the board of delegates be transferred to the Association so incorporated, and that the business of the fund be conducted in compliance with the articles of association, and the existing governing body was declared to be dissolved.

EASTBOURNE MEMORIAL HOSPITAL.—The sixth annual report, just issued, shows an increase in the number of in-patients. There were thirty-three accident cases. Twelve major and many minor operations were performed. The hospital, as enlarged, was opened in March last. The total income amounted to £1301 4*s.* 5*d.*, and the expenses to £1247 18*s.* 2*d.* It may be observed that Mr. A. B. Wrangham has recently offered to give £400 towards a new wing to the hospital, for the use of children.

ROYAL FREE HOSPITAL, GRAY'S-INN-ROAD.—This institution is doing most useful work, and is in sound working condition. The medical and surgical treatment of the patients, and the general care and management of the resources of the hospital are satisfactory. The committee are impressed with the importance of rebuilding the front of the building in accordance with the admirable arrangements of the other three sides, and ask for the support of the public towards the completion of the work.

BRADFORD INFIRMARY.—The annual report for 1889 shows that altogether 14,000 persons were assisted in the course of the year by the institution. There had been a steady increase in the number of patients, especially of in-patients, the new cases being 138 more than in the preceding year. The appeal in September for donations towards the liquidation of the accumulated debt, estimated at £2200, had been liberally responded to, and the debt was cleared off. But the revenue still falls short of what is required to avert a recurrence of the financial difficulty.

THE SANITARY ASSURANCE ASSOCIATION.—The ninth annual meeting of the members of the Sanitary Assurance Association was held on Feb. 17th at 5, Argyll-place, W., Sir Joseph Fayrer, K.C.S.I., F.R.S., in the chair. Mr. Joseph Hadley, secretary, read the annual report, which referred to the work of the Council in promoting the Sanitary Registration of Buildings Bill, and to the disclosure of serious sanitary defects in Board schools and other places which had been inspected by the Association during the past year. The income for the year was £398 8*s.* 10*d.* The Chairman proposed, and Alderman Sir Vincent Kennett Barrington seconded, the adoption of the report. General Burne, C.B., and Dr. Danford Thomas were re-elected members of the Executive Council, and Sir Joseph Fayrer and Professor T. Roger Smith, F.R.I.B.A., were re-elected president and vice-president respectively.

BRITISH MEDICAL TEMPERANCE ASSOCIATION.—The council of the Association have just admitted twelve new members (abstaining medical men) and fourteen new associates (abstaining students). A meeting, to which visitors are invited, is to be held on Tuesday next, at 4 o'clock, at the room of the Medical Society of London, 11, Chandos-street, at which the report of a committee, consisting of Drs. Moir, Morton, and Pearce, will be presented, entitled "An Analysis and Comparison of the Consumption of Alcohol in Hospitals in 1863 and 1888."

PROPOSED NEW HOSPITAL AND DISPENSARY, SCARBOROUGH.—Dr. J. W. Taylor, the president, occupied the chair on the 14th ult., at a private meeting of the governors of this institution, to consider, chiefly, the selection of a new site for a hospital and dispensary, the locality and fabric in Elders-street being unsuitable and inadequate for the requirements of a hospital. A site, on King's Cliff, having an extensive and uninterrupted frontage to the sea, had been offered for £14,000. It was resolved to convene a general meeting of the subscribers, with the view of coming to a final decision on the question.

THE CHILDREN'S HOSPITAL, PENDLEBURY.—The Mayor of Manchester, Mr. Alderman Mark, presided at the annual meeting, held on Jan. 22nd. The report of the medical officers gives a careful analysis of the various cases of disease treated by them in the dispensary and hospital, and again renews the subject of insurance of very young children, based upon an additional year's experience, commenting on the need of further legislation on the question. A cot had been endowed by the liberality of Mr. and Mrs. William Agnew with £1000. The general financial statement showed a balance due to the bank of £1417 19*s.* 2*d.*, the accumulation of several annual deficits.

PROPOSED NEW BUILDINGS FOR THE YORKSHIRE COLLEGE.—The council of the Yorkshire College are appealing to the public for £40,000, half of which has been already collected, to enable them to erect new buildings for the medical department, a college library, and examination hall. The council are prepared to devote £25,000 of this sum to the buildings and equipment of the department of medicine, and £15,000 to the erection of the college library and hall. The College is now in receipt from the Treasury of an annual grant of £1400—subject, however, to revision at the end of five years, when its continuance will depend on the efficiency of equipment and the number of students and other conditions which alone can secure liberal local support.

BURNING OF THE TORONTO UNIVERSITY.—The Toronto University, the finest educational building in Canada, and the opening of the Biological department of which our correspondent announced last week, was almost entirely destroyed by fire on the 16th inst. Preparations were being made for a public reception, the walls hung with flags and evergreens, and the rooms lighted by petroleum lamps, when an accident occurred to one of the lamps and the floor caught fire. The flames spread up the staircase and caught the decorations, and the whole of the interior of the building was soon in a blaze, and shortly afterwards completely destroyed. The scientific apparatus, and the library, with 33,000 volumes, many of which cannot be replaced, were consumed. The loss is estimated at 500,000 dollars.

COTTAGE HOSPITALS.—*Clevedon:* During the past year more patients had been admitted than in any previous year. The large majority were cured, and able to resume their occupations after a few weeks. After payment of the year's disbursements a small balance remained in hand.—*Wallingford:* The report for 1889 is very satisfactory. By a recent arrangement it comprises a period of fifteen months. During that period 101 patients had been treated in the hospital, and the number of out-patients was 104. The income had been well maintained, and the financial position showed a small credit balance.—*Ashburton and Buckfastleigh:* The general committee congratulate the subscribers on the improved working of the hospital in the new buildings formally opened in August last, the whole cost of which had been defrayed. Forty-six patients were under treatment during the past year. The total receipts were £213, and the expenditure £206.—*Tetbury:* The annual report for 1889 (the twenty-second) shows that the usefulness of the hospital had been fully sustained. Thirty-eight patients had been treated. The ordinary income still fails to meet the expenditure, and a small debit balance is shown.—*Mold:* The annual report states that by the recent alteration of the rules workmen had during the past year contributed £57 to the funds, without any corresponding increase in the number of patients, as had been anticipated. By the generosity of two ladies a mortuary had been built, which supplied a long-felt want. The balance in hand was £226, against £191 last year.—*Blackheath and Charlton:* The sixth annual report, just issued, is of a very gratifying character, alike as to the past year's work of the hospital and its financial condition.—*Budleigh Salterton:* The first report of this hospital, which was erected mainly through the benevolence of a gentleman, who anonymously contributed £520 towards its erection and £1000 towards its endowment fund, shows that the institution has been doing good work since its opening at the beginning of last year. The committee believe that the subscribers will be satisfied with the financial statements submitted to them in the report, and they are much encouraged by the support accorded to the hospital. The furnishing account (the money for which was raised by the bazaar held at Dr. Brushfield's in 1888) shows a balance in hand of £70 16*s.* 8*d.*, and the maintenance fund of £86 17*s.* 3*d.*, facts which plainly point to the nature of the assistance received by the institution.

PROVINCIAL SATURDAY HOSPITAL COLLECTIONS.—The Chester Hospital Saturday collections last year amounted to £300 11*s.* 10*d.*, against £291 16*s.* in 1888.—The workmen of Sir W. G. Armstrong, Mitchell, and Co., at Elswick, have contributed £393 6*s.* 6*d.* to the medical charities for the quarter ending December, 1889. Of this sum £359 4*s.* was apportioned to the Royal Infirmary, Newcastle-upon-Tyne.—The Shrewsbury Hospital Saturday collection for 1889 amounted to £211 13*s.* 6*d.*, of which £105 has been given to the Salop Infirmary, and £53 each to the Eye, Ear, and Throat Hospital and the Dispensary.—The workmen's collection committee of various works connected with the Warrington Infirmary and Dispensary collected for that institution during the past year £700.—The sum raised by the workers in the shipbuilding department of the Fairfield Shipbuilding and Engineering Company, Glasgow, for the medical charities in the year 1889 was £314 7*s.* 3*d.*, of which £204 7*s.* 3*d.* was apportioned to the Western Infirmary.

BEQUESTS AND DONATIONS TO HOSPITALS.—Lord Bute has contributed £500 to the fund for the extension of the Cardiff Infirmary.—Under the will of the late Mrs. Edward T. Lucas of Albert Lodge, Victoria-square, Bristol, £1500 has been bequeathed to the Bristol General Hospital.—The late Mr. Samuel Fielden, of Centre-vale, Todmorden, bequeathed to the Manchester Royal Infirmary £3000, to the Brompton Hospital for Consumption £2000, and to the National Orthopædic Hospital £2000.—The late Mr. H. Highway, J.P., bequeathed £200 to the Walsall Cottage Hospital.—Sir Edward Guinness has contributed £100 to the Royal Victoria Hospital, Bournemouth.—The Goldsmiths' Company has given £500 towards the extension and building fund of the Royal London Ophthalmic Hospital.—Mr. Thomas F. Gibson, late of Fitzjohn-avenue, Hampstead, bequeathed £500 to the University College or North London Hospital, and £200 to the Tunbridge Wells Infirmary.—The committee of the London Charity Football Association has distributed to various metropolitan medical and other charities £175.

THE FRENCH HOSPITAL AND DISPENSARY.—The twenty-first annual dinner on behalf of this institution was given on Saturday last at the Hôtel Métropole, his Excellency the French Ambassador in the chair, supported by the Right Hon. the Lord Mayor, the Sheriffs, and representatives of the Corps Diplomatique, together with some 250 friends and supporters of the charity. His Excellency insisted upon the cosmopolitan nature of the charity, and on the constantly extended sphere of its activity. He announced that the new premises in Shaftesbury-avenue were now rapidly approaching completion, and made an urgent appeal for funds to meet the balance (£8000) still required to cover the cost of building and fitting up the new premises, towards which the Minister of the Interior had that day promised a subscription of 2000 fr. The Lord Mayor insisted upon the friendly feelings of the English towards their French neighbours, and suggested that an application to the Corporation for financial assistance would probably meet with their favourable consideration. The report showed the large amount of work done by the hospital in alleviating the sufferings of the French-speaking poor, and the treasurer announced that £2000 had been subscribed during the evening.

WEST NORFOLK AND LYNN HOSPITAL.—The fifty-fifth annual report states that the board had remodelled the nursing staff, and the nurses had been augmented in number by the appointment of probationers. The average number of beds occupied was thirty-six, and the average cost per head £58 4*s.* 2*d.* The year closed with a deficiency of £961 19*s.* 1*d.*, including a debt of £478 2*s.* 10*d.* brought over from 1888.

ESSEX AND COLCHESTER HOSPITAL.—During the past year, the number of in- and out-patients was largely in excess of the year 1888. The annual subscriptions remained about the same. The public interest in the institution had never flagged, but was increasing. £1000 had been received as a gift from an unknown donor, and the work of the hospital staff continued to be most efficiently performed.

ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL.—At the annual meeting of the subscribers, held at Southsea on the 12th inst., Mr. J. Pares, the senior vice-president, occupied the chair. On opening the proceedings he congratulated those present on the great increase in nursing receipts. They had now a hundred beds. The finances showed a deficiency of £461 2*s.* 11*d.*, and while the income was £300 better than four years ago, the expenditure was £500 more. The average cost of each bed occupied during the year was £43 6*s.* 6*d.*, and the daily average of in-patients was 111·33 against 98·47 in 1888.

MEDICAL NOTES IN PARLIAMENT.

Lunacy Laws.

IN the House of Commons, on Monday, Mr. W. H. Smith, in answer to Mr. Salt, replied that a Bill relating to lunacy laws would shortly be introduced. It would be one of simple consolidation only. No fresh legislation would be introduced. The Lunacy Laws Amendment Act of last session comes into force on April 1st, and it was hoped that the Consolidation Act, as a code for the guidance of those concerned in the administration of the law, might be passed before that date.

Vaccination Returns.

In reply to a question by Mr. Bradlaugh, the Home Secretary said that the bulk of the returns of vaccination prosecutions ordered last year had been ready for some time, but there had been great difficulty in obtaining replies from some places. Returns from three towns were still outstanding, and as soon as these were collected the return would be presented.

Medical Certificates.

On Thursday, in answer to a question by Sir G. Campbell relating to the case of Mr. Clifford Lloyd, the Chancellor of the Exchequer said that neither under the new nor the old rules could a man take up or put aside a medical certificate. It was the duty of the Government to employ one who had left the service through ill-health as soon as his health was sufficiently restored. Mr. Clifford Lloyd was appointed to a permanent post in the Civil Service, and would drop the pension formerly awarded to him. He would continue to serve in this appointment till he was sixty years of age, or had become incapacitated to discharge the duties of his office.

BOOKS ETC. RECEIVED.

APPLETON & CO., New York and London.

A Text-book of Animal Physiology, with introductory Chapters on General Biology, and a full Treatment of Reproduction. For Students of Human and Comparative (Veterinary) Medicine and of General Biology. By W. Mills, M.A., M.D., L.R.C.P.Eng. With 500 Illustrations. 1889.

BLACK, ADAM & CHARLES, Edinburgh.

The Collected Writings of Thomas De Quincey. New and enlarged Edition. By Dr. Masson. Vol. IV. Biographies and Biographic Sketches. 1890. pp. 439.

CHURCHILL, J. & A., New Burlington-street, London, W.

A Manual of the Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P. pp. 895.

The Bradshaw Lecture on Colotomy, Lumbar and Iliac, with special reference to the choice of Operation. By Thos. Bryant, F.R.C.S. 1890. pp. 47.

CLARENDON PRESS, Oxford and Amen-corner, London, E.C.

Essays upon Heredity and Kindred Biological Problems. By Dr. August Weismann. Authorised Translation. Edited by E. B. Poulton, M.A., F.L.S., F.G.S., Selmar Schönland, Ph.D., and A. E. Shipley, M.A., F.L.S. 1889. pp. 455.

COURIER COMPANY, Buffalo.

Struggles and Triumphs, or Sixty Years' Recollections of P. T. Barnum. Written by himself. Illustrated. 1889. pp. 360.

DAVIS, F. A., Philadelphia and London.

Spinal Concussion: Surgically considered as a Cause of Spinal Injury, and Neurologically restricted to a certain Symptom Group. By S. V. Clevenger, M.D. With 30 Wood Engravings. 1889. pp. 359.

GRIFFIN, C., & COMPANY, Exeter-street, Strand, London.

The Flowering Plant, as illustrating the First Principles of Botany. Especially adapted for London Matriculation, South Kensington, and University Local Examinations in Elementary Botany. By J. R. A. Davis, B.A. With Illustrations, &c. 1890. pp. 181.

KEENER, W. T., Washington-street, Chicago.

Rectal and Anal Surgery, with Description of the Secret Methods of the Itinerant Specialists. By E. Andrews, M.D., LL.D., and E. W. Andrews, A.M., M.D. Second Edition, revised and enlarged, with Illustrations and Formulary. 1889. pp. 140.

Intestinal Surgery. By N. Senn, M.D., Ph.D. 1889. pp. 269.

The Dental College Series of Text-books—Dental Chemistry and Metallurgy. Being the Second Edition of the Dentists' Manual of Special Chemistry, revised and rewritten. By Clifford Mitchell, M.D. 1890. pp. 411.

Electricity and the Methods of its Employment in removing superfluous Hair and other Facial Blemishes. By Plym S. Hayes, A.M., M.D. 1889. pp. 128.

LEWIS, H. K., Gower-street, London.

Asthma considered specially in relation to Nasal Disease. By E. Schmiegelow, M.D. 1890. pp. 90.

Ambulance Lectures. First Aid to the Injured. By S. Osborn, F.R.C.S. Second Edition, with Illustrations. 1890. pp. 126.

LONGMANS, GREEN, & Co., London.

A Dictionary of Applied Chemistry. By T. E. Thorpe, B.Sc. (Vict.), Ph.D., F.R.S., assisted by eminent Contributors. In Three Vols. Vol. I.: A—Dy. 1890. pp. 715. Price 42*s.*

MURRAY, JOHN, Albemarle-street, London.

Journal of Researches into the Natural History and Geology of the Countries visited during the Voyage round the World of H.M.S. *Beagle*. By Charles Darwin, M.A., F.R.S. A new Edition, with Illustrations. 1890. pp. 551.

PENTLAND, YOUNG J., Edinburgh and London.

A Handbook of Diseases of Women, including Diseases of the Bladder and Urethra. By Dr. F. Winckel. Authorised translation. Edited by T. Parvin, M.D. Second Edition, revised and enlarged. With 150 Illustrations. 1890. pp. 766.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. B. Tuke, M.D., and G. S. Woodhead, M.D. Vol. II. 1890. pp. 279.

SAMPSON LOW, MARSTON, & Co., Fetter-lane, Fleet-street, London.

New Zealand for the Emigrant, Invalid, and Tourist. By J. M. Moore, M.D. Edin., M.R.C.S. Eng. 1890. pp. 253.

SMITH, ELDER, & Co., Waterloo-place, London.

St. Bartholomew's Hospital Reports. Edited by W. S. Church, M.D., and W. J. Walsham, F.R.C.S. Vol. XXV. 1889. pp. 376.

Transactions of the Pathological Society of London. Vol. LX. Report of the Proceedings for the Session 1888-89. pp. 478.

SWAN SONNENSCHEIN & Co., Paternoster-square, London.

Health Troubles of City Life. By George Herschell, M.D. Lond. Second Edition. 1890. pp. 87.

Habit and Health. A Book of Golden Hints for Middle Age. Derived from the Works of eminent Medical Men, and edited by Guy Beddoes. 1890. pp. 347.

WRIGHT, JOHN, & Co., Bristol; and HAMILTON, ADAMS, & Co., London.

The Medical Annual for 1890. pp. 727. Price 6*s.* 6*d.*

The Abolition of Suffering; by S. B. G. M'Kinney, M.A., L.R.C.S. & P. Edin. (Elliot Stock, London, 1890).—The Effect of Town Life on the General Health, with especial reference to London; by J. P. Williams-Freeman, M.D. (W. H. Allen & Co., London, S.W., 1890).—Transactions of the State Medical Society of Arkansas, Pine Bluff, 1889 (Mitchell & Bettis, Little Rock, Arkansas).—A Handbook for Operators in Medical Electricity and Massage, containing diagrams of the chief Motor Points and concise Tables, showing the Action of the Muscles and Nerves involved; by H. N. Lawrence, A.I.E.E. (George Gill & Sons, London, price 1*s.*).—Les Maladies Epidémiques dans le Midi; par le Dr. J. E. Vivant, de Monaco (Octave Doin, Paris, 1890).—Lippincott's Magazine, January.—Index Medicus: Authors and Subjects, Vol. XI., No. 12, December, 1889 (Trübner & Co., and Lewis, London).—Tidsskrift for den Norske Lægeforening; redigeret af Dr. Med. H. Strom; Overlæge G. E. Bentzen; Januar, Nr. 1, 1890 (Af Alb Cammermeyer, Kristiania).—Demonstrations in Clinical Medicine; by A. Macgregor, M.D.: Case of Hemiplegia, No. 1 (Alma Mater Press, Aberdeen, 1890).—Reports of Professor Joseph Henry, Secretary of the Smithsonian Institution, for the years 1867, 1869, 1870, and 1876 (Government Printing Office, Washington).—The Medico-Legal Journal, Vol. VII., No. 2, September, 1889 (The Medico-Legal Journal Association, New York).—The Advertiser's A B C of Official Scales and Advertisement Press Directory, 1890; by T. B. Browne (Offices, Queen Victoria-street, London, price 10*s.* 6*d.*).—Liederbuch für Deutsche Aerzte und Naturforscher; Gesammelt und geordnet von Dr. Med. Korb-Döbeln (Gebrüder Lüdeking, Hamburg).—Il secondo Biennio di Cura alle fonti termali Acidule, Saline, Ferruginose, Arsenicali, con Litina di Acquarossa in cantone ticino. Pel Dott. Giuseppe Soffiantini (Fratelli Rechiedei, Milano, 1889).—Published by Elliot Stock, London: The Field Club, edited by Rev. T. Wood, No. 2, Feb., 1890; A Handbook of Scientific and Literary Bible Difficulties, edited by Rev. R. Tuck, B.A. Lond., No. 2, price 6*d.*; Springtide, an illustrated Magazine for Girls and Boys, Vol. I., No. 2, February, 1890, price 1*d.*; The Antiquary, a Magazine devoted to the Study of the Past, No. 2, New Series (No. 123, Vol. XXI.), February,

1890, price 1s.—Transactions of the American Ophthalmological Society, Twenty-fifth Annual Meeting, New London, Conn., 1889 (published by the Society, Hartford).—Die Zuckerbildung im Thierkörper; von Prof. Dr. J. Seegen (A. Hirschwald, Berlin, 1890).—Recherches Cliniques et Expérimentales sur l'Antisepsie Médicale; par le Dr. Z. Petresco (Imprimerie Nationale, Jassy, 1889).—Verhandlungen des Medicinischen Vereins zu Greifswald; herausgegeben von Prof. Dr. Fr. Mosler und Dr. E. Hoffmann (Georg Thieme, Leipzig, 1890).—De la Dégénérescence Ascendante secondaire du Faisceau de Gowers; par le Dr. X. Francotte (F. Hayez, Bruxelles, 1889).—The Pharmacopœia of the London Skin Hospital; edited by James Startin, Senior Surgeon to the Hospital, 1889 (Harrison & Sons, London).—Little Dinners, by a Live Lord ("Society" Office, Strand, London, price 1s.).—L'Art Dentaire: Historique et Description de l'Art du Dentiste; par D. A. Tayac; avec 59 figures intercalées dans le texte (J. B. Baillière et Fils, Paris, 1890).—The Law relating to Drunkenness and Inebriety; by J. R. McIlwraith, Esq., M.A., LL.B. (H. K. Lewis, London).—Therapeutisches Lexikon für Praktische Aerzte; herausgegeben von Dr. Anton Bum; 1 und 2 Lieferungen (Urban und Schwarzenberg, Wien und Leipzig, 1890).—The Cell Theory, Past and Present: being the Inaugural Address delivered Nov. 1st, 1889, to the Scottish Microscopical Society, by Sir William Turner, Knt., M.B., LL.D., President of the Society (Neill & Co., Edinburgh, 1890).—On the Question of Anæsthetics in Operations for Adenoid Growths of the Naso-pharynx; by H. Davis, M.R.C.S. (H. K. Lewis, London, 1890).—The Review of Reviews, February.—Magazines for February: Good Words, Sunday Magazine (Isbister), Wit and Wisdom, Sunday at Home, Scribner's Magazine, Gardener's Magazine, Boy's Own Paper, Girl's Own Paper.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.

ANGELL, Mr., has been reappointed Analyst for the Borough of Guildford.

BARNETT, H., L.R.C.P., M.R.C.S., has been appointed Medical Officer for the Fourth District of the Church Stretton Union.

BROWNE, OSWALD A., M.B. Cantab., M.R.C.P. Lond., has been appointed Assistant Physician to the Metropolitan Hospital, Kingsland-road, vice H. H. Tooth, M.D., resigned.

BROWNING, FREDERICK WM., L.R.C.P., L.R.C.S. Edin., &c., has been appointed Assistant Physician to the London Medical Mission, St. Giles', W.C., vice H. J. Bailey, M.B., C.M., resigned.

CLARK, W. F., L.R.C.P., L.R.C.S. Edin., has been reappointed Medical Officer for Cheshunt.

COCKEY, E. P., M.D. Lond., M.R.C.S., has been appointed Medical Officer for the Eighth District of the Chelmsford Union.

FOTHERBY, H. J., M.D., M.R.C.P. Lond., has been appointed Consulting Physician to the Metropolitan Hospital, Kingsland-road.

GRAVELEY, H., M.R.C.S., L.S.A., has been appointed Medical Officer for the First District of the Steyning Union.

HOLLINGS, C. E., L.R.C.P., L.R.C.S. Edin., has been reappointed Medical Officer for Calverley.

JACKSON, J. B., M.D., M.Ch. R.U.I., has been appointed Medical Officer for the No. 2 District of the Coventry Union.

LEACH, ALFRED, M.B. Aber., M.R.C.P. Edin., has been appointed Assistant Physician to the Italian Hospital, London, W.C.

MACKINTOSH, A., M.D. Glas., L.F.P.S., L.M. Glas., has been reappointed Medical Officer for the Chesterfield Rural Sanitary District.

PRICE, F. S., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the No. 2 Ward of the Holborn Union.

STAFFORD, T. J., L.K.C.P., L.R.C.S. Irel., has been appointed Medical Inspector for Magherafelt Union.

STEVENS, P. R., L.R.C.P., M.R.C.S., has been appointed Medical Officer for the Benenden District of the Cranbrook Union.

SWEETING, R. D. R., M.R.C.S., has been appointed Medical Inspector to the Local Government Board.

TABOR, CHARLES J., M.B., M.R.C.S., L.R.C.P., has been appointed Public Vaccinator for the Illogan District of the Redruth Union, Cornwall.

TOOTH, HOWARD H., M.D. Cantab., F.R.C.P. Lond., has been appointed Physician to the Metropolitan Hospital, Kingsland-road, vice H. J. Fotherby, M.D., resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement

ADDENBROOKE'S HOSPITAL, Cambridge.—Resident House Surgeon. Salary £65 per annum, with board, lodging, and washing in the hospital.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Assistant Physician.

COUNTY OF WORCESTER.—County Medical Officer of Health. Salary £800 per annum, with such allowances for travelling expenses as may be sanctioned by the Council.

CROYDON UNION.—Assistant Medical Superintendent and Dispenser at the Infirmary, Mayday-road, Croydon. Salary £125, increasing £5 per annum, up to £150, with furnished apartments, rations, and washing, and (if preferred) £3 10s. per annum in lieu of beer.

DURNESS, Sutherlandshire.—Medical Officer. Salary £150 (with practice, population 1000), and free house. (Apply to the Inspector of Poor).

KENT COUNTY ASYLUM, Barming Heath, Maidstone.—Third Assistant Medical Officer. Salary £150 a year, with furnished quarters, attendance, fuel, lighting, washing, garden produce, and milk.

KING'S COLLEGE, London.—Professor of Physiology.

LIVERPOOL DISPENSARIES.—Assistant Surgeon. Salary £80 per annum, with board and apartments.

LIVERPOOL NORTHERN HOSPITAL.—House Physician. Salary £80 per annum, with residence and maintenance in the house.

LONDON COUNTY ASYLUM, Banstead.—A Senior Assistant Medical Officer. Salary £250 per annum, rising £10 annually to £300, with board, furnished apartments, and washing.

LONDON HOSPITAL MEDICAL COLLEGE, Turner-street, Mile-end, E.—Two Assistant Demonstrators of Anatomy. Salary £90 per annum each.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Senior and Junior House Physicians respectively. Salary of the former £100 per annum, and of the latter £50 per annum. In each case board and apartments are provided in the hospital.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Surgeon for six months. Board and lodging are provided.

WOLVERHAMPTON EYE INFIRMARY.—Resident Assistant. No salary, but rooms, with board and washing.

Births, Marriages, and Deaths.

BIRTHS.

ARNOLD.—On Dec. 15th, at Nagasaki, Japan, the wife of Dr. Arnold, of a daughter.

BARNES.—On Jan. 29th, at the Public Asylum, Berbice, British Guiana, the wife of W. Stanley Barnes, M.D., of a daughter.

DIACK.—On Jan. 15th, at Fort Beaufort, Cape Colony, the wife of Alex. D. Diack, M.D., of a daughter.

FOWLER.—On Feb. 13th, at Finsbury-pavement, E.C., the wife of Walter Fowler, M.A., M.B., F.R.C.S., of a son.

GIMBLETT.—On Feb. 4th, at Amhurst-road, N.E., the wife of W. Harry Gimblett, L.K.Q.C.P.I., &c., of a daughter.

HUTCHINSON.—On Feb. 15th, at Brook-street, Grosvenor-square, W., the wife of S. John Hutchinson, M.R.C.S., of a daughter.

MASON.—On Feb. 15th, at Abbey Lodge, Barking, Essex, the wife of Hugh Herbert Mason, M.R.C.S., of a son.

TAYLOR.—On Feb. 13th, at Surbiton-hill, the wife of Arthur S. Taylor, B.A., M.B., B.C. Cantab., F.R.C.S., of a daughter.

TIDEY.—On Feb. 17th, at Territet, Montreux, the wife of Stuart Tidey, M.B. Lond., Swiss Fed. Med. Dip., of a daughter.

MARRIAGES.

DICKINSON—OXLEY.—On Feb. 13th, at Christ Church, Linnet-lane, Liverpool, by the Rev. T. W. M. Lund, M.A., assisted by the Rev. Robert Irving, M.A., Edward H. Dickinson, M.A., M.D., to Emma, widow of the late Martin G. B. Oxley, M.D., of Liverpool.

MACKENZIE—TAYLOR.—On Feb. 12th, at the Parish Church, Bolas Magna, Allan Grant Mackenzie, F.R.C.S. Edin., to Fannie, youngest daughter of Thos. Taylor, Esq., of Burleigh, Wellington, Shropshire.

SHEARS—JEVONS.—On Feb. 18th, at The Ancient Chapel of Toxteth-park, Liverpool, by the Rev. L. P. Jacks, M.A., Charles H. Shears, M.R.C.S. and L.R.C.P. Lond., of Liverpool and Birkenhead, to Susan, fifth daughter of Henry Jevons, J.P., of Liverpool.

WOOD—ROBERTS.—On Jan. 28th, 1890, at St. Luke's, Redcliffe-square, South Kensington, by the Rev. Herbert Maitland, cousin of the bridegroom, assisted by the Rev. W. Fraser Handcock, Vicar, and the Rev. H. H. Bartrum, Percy Moore Wood, M.R.C.S., L.R.C.P. Lond., late Government Medical Officer at Port Darwin, South Australia, son of the late Charles William Wood, Q.C., to Janet Sophie, younger daughter of Richard Willett Roberts, of 34, Redcliffe-square, and Gray's Inn.

DEATHS.

BAYNES.—On Feb. 17th, at Courtland-terrace, Kensington, W., William Wogan Baynes, R.N., Deputy Inspector-General of Hospitals, aged 76.

BUSH.—On Feb. 14th, at Gloucester-terrace, Hyde Park, suddenly, Richard Hake Bush, M.D., last surviving son of Col. Richard Yeats-Brown Bush, Bengal Army.

CAM.—On Feb. 17th, at his residence, St. Owen-street, Hereford, Thomas Cam, F.R.C.S., J.P., aged 77.

COLLAMBELL.—On Feb. 16th, at 148, Lambeth-road, Charles Collambell, J.P., F.R.C.S., aged 76.

DALE.—On Feb. 16th, at Islington, Liverpool, Thomas Dale, L.R.C.P. Edin., M.R.C.S., aged 65.

LILLEY.—On Feb. 14th, at his residence, High Cross, Milverton, Leamington, James Harley Lilley, M.D., aged 65.

POWER.—On Feb. 14th, at Fant, Torquay, Francis James Power, M.A. Cantab., L.R.C.P. Edin., &c., eldest son of the late Dr. Power, Maidstone.

SPILSBURY.—On Feb. 11th, suddenly, at 43, Cornwall-road, Westbourne Park, Thomas Hamilton Spilsbury, late Colonial Surgeon of the Gambia (Bathurst), aged 56.

WALKER.—On Feb. 13th, at Westbourne Villas, West Brighton, William Newman Walker, F.R.C.S. Eng., &c., aged 69.

WILSON.—On Feb. 12th, at Langham-street, W., George John Marris Wilson, M.D., M.R.C.S., aged 76.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

Monday, February 24.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, daily at 10 A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.
ST. MARK'S HOSPITAL.—Operations, 2.30 P.M.; Tuesday, 2.30 P.M.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.
UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.
LONDON POST-GRADUATE COURSE (Royal London Ophthalmic Hospital, Moorfields).—1 P.M. Mr. W. Lang: External Diseases of the Eye.
THE SANITARY INSTITUTE (Parkes Museum, Margaret-st., W.).—3 P.M. Dr. A. T. Schofield: The Training of Children. (For Ladies.)
LONDON POST-GRADUATE COURSE (Hospital for Sick Children, Great Ormond-street, Bloomsbury).—4 P.M. Dr. Angel Money: Rickets.
THE THROAT HOSPITAL (Golden-square, W.).—5.30 P.M. Dr. James W. Bond: Nasal Polypus.
SOCIETY OF ARTS.—8 P.M. Mr. T. Bolas: Stereotyping. (Cantor Lecture.)
MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. Mr. Davy: A case of Double Talipes Equino-varus after Operation.—Dr. Beevor: (1) Ossified Scalenus Medius; (2) Erb's Paralysis.—Mr. Allingham: Elephantiasis.—Dr. Sidney Phillips: Erb's Paralysis.—Dr. Seymour Taylor: Severe Valvular Disease of Heart.—Dr. Stephen Mackenzie: Lead Paralysis.

Tuesday, February 25.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.
GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same days, 2 P.M.
ROYAL INSTITUTION.—3 P.M. Prof. G. J. Romanes: The Post-Darwinian Period.
BRITISH MEDICAL TEMPERANCE ASSOCIATION (Rooms of the Medical Society of London).—4 P.M. The Report of a Committee (Drs. Moir, Morton, and Pearce) will be presented, entitled "An Analysis and Comparison of the Consumption of Alcohol in Hospitals in 1863 and 1888." Discussion will follow.
LONDON POST-GRADUATE COURSE (Hospital for Diseases of the Skin, Blackfriars).—4 P.M. Mr. Jonathan Hutchinson: Morphœa and Ichthyosis.
ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. Arthur Ransome: Etiology and Prevention of Phthisis. (Milroy Lecture.)
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8.30 P.M. Dr. Bastian: On the Symptomatology of Total Transverse Lesions of the Spinal Cord, with special reference to the Conditions of the various Reflexes.

Wednesday, February 26.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M. Operations by the Obstetric Physicians on Thursdays at 2 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M. Thursday & Saturday, same hour.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M.; Surgical Visits on Wednesday and Saturday at 9.15 A.M.
LONDON POST-GRADUATE COURSE (Hospital for Consumption and Diseases of the Chest, Brompton).—4 P.M. Dr. Percy Kidd: Tubercular Affections of the Throat.
THE THROAT HOSPITAL (Golden-square, W.).—5.30 P.M. Mr. T. Mark Hovell: Some Affections of the Middle Ear.
HUNTERIAN SOCIETY.—8 P.M. President's Address. Dr. Hingston Fox: Notes and cases illustrative of Glycosuria.
LONDON POST-GRADUATE COURSE (Royal London Ophthalmic Hospital, Moorfields).—8 P.M. Mr. Quarry Silcock: Ophthalmoscopic Cases.
SOCIETY OF ARTS.—8 P.M. Mr. A. Montefiore: The English in Florida.

Thursday, February 27.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.
LONDON POST-GRADUATE COURSE (National Hospital for the Paralysed and the Epileptic, Queen-square, Bloomsbury).—2 P.M. Mr. R. Brudenell Carter: Ocular Symptoms in Nervous Diseases.
ROYAL INSTITUTION.—3 P.M. Rev. Canon Ainger: The Three Stages of Shakespeare's Art.
LONDON POST-GRADUATE COURSE (Hospital for Sick Children, Great Ormond-street, Bloomsbury).—4 P.M. Dr. Angel Money: Rickets.
CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, VICTORIA-PARK, E.—4.30 P.M. Dr. Tylden: Mitral Stenosis.
ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. Arthur Ransome: Etiology and Prevention of Phthisis. (Milroy Lecture.)
SOCIETY OF ARTS.—8 P.M. Mr. William Sherriff: The Northern Shan States and the Burma-China Railway.

Friday, February 28.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
LONDON POST-GRADUATE COURSE (Hospital for Consumption and Diseases of the Chest, Brompton).—4 P.M. Dr. Percy Kidd: Tubercular Affections of the Throat.
THE CANCER HOSPITAL (FREE), FULHAM-ROAD, BROMPTON, S.W.—4 P.M. Dr. Purcell: Cancer of the Tongue.
CLINICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Butlin: Two cases of Glandular Tumour of the Tongue.—Dr. Dickinson: Injection of Saline Fluid into the Veins in Diabetic Coma.—Dr. Samuel West: Case of Cheyne Stokes Breathing in the course of Granular Kidney of three months' duration.—Dr. Pye-Smith: A case of Acute Universal Dermatitis apparently due to the administration of Chloralamide.
ROYAL INSTITUTION.—9 P.M. Prof. C. H. H. Parry: Evolution in Music.

Saturday, March 1.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.
LONDON POST-GRADUATE COURSE (Hospital for Diseases of the Skin, Blackfriars).—2 P.M. Dr. Payne: Parasitic Diseases of the Skin other than Ringworm.
ROYAL INSTITUTION.—3 P.M. Lord Rayleigh: Electricity and Magnetism.
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8.30 P.M. Annual Meeting. President's Address.
THE SANITARY INSTITUTE (Parkes Museum, Margaret-st., W.).—3 P.M. Dr. A. T. Schofield: Flesh and Blood. (For Ladies.)

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, February 20th, 1890.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Feb. 14	29·86	N.W.	39	37	47	42	34	..	Overcast
,, 15	29·56	E.	35	35	..	42	25	·52	Raining
,, 16	29·70	S.W.	38	36	82	48	35	·34	Cloudy
,, 17	29·84	S.E.	41	39	62	50	37	..	Overcast
,, 18	30·01	S.E.	41	40	73	48	40	..	Cloudy
,, 19	30·25	E.	41	39	61	44	39	..	Cloudy
,, 20	30·11	E.	39	38	..	41	38	..	Overcast

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

HOSPITAL APPOINTMENTS IN DUBLIN.

Mr. Lafan (Cashel).—We trust our correspondent is more accurate in his information than he is in his speculations as to the authorship of our articles or what he terms the illiberal nature of our views. We know no party politics, and, without agreeing to the competitive examination method, hold with him that in making appointments to hospitals the best candidates should be elected, irrespectively of creed. We entirely disclaim sectarianism in our treatment of such matters, or of any matters. Our correspondent would better justify his boast of superior liberality by according similar virtues to others than those of his own way of thinking. Medicine is a liberal profession.

Hydrophobia.—Certainly the method is known in England, but the means of carrying it out are more complete in France than in this country.

TREATMENT OF ACNE.

To the Editors of THE LANCET.

SIRS,—In the report of my lecture on Acne, published in your last issue I find I have erroneously ascribed the recommendation of bromide of potassium in certain cases of acne to Dr. Jamieson of Edinburgh, instead of to Dr. Arthur Jamison of London, to whom the suggestion is really due. By allowing me to make this correction you will oblige

Your obedient servant,

Feb. 18th, 1890. J. F. PAYNE.

ADVERTISEMENTS BY THE GROSS.

AN enterprising manufacturer of Manchester, in advertising his porous plasters, intimates that the names of physicians and surgeons purchasing a gross can be printed upon the wrapper and back cloth of the plaster. What a fine sense he must have of professional methods! Alas, that some medical men give too much reason to such persons to believe that they are open to such offers.

Mr. Clarence Beesley.—Parkes' Hygiene, Ganot's Physics, Baldwin Latham's Sanitary Engineering, and the Public Health Acts. A practical knowledge of chemistry and microscopical analysis of water is required, as well as of the manner in which a sanitary report should be written.

Medical Student will find the information he desires in our Students' Number, published in September last.

Dr. Hatton (Church).—*Berliner Klinische Wochenschrift* and *Le Progrès Médical*, which can be obtained through Messrs. Williams & Norgate, Covent-garden.

TOOGOOD *v.* WILKES.

To the Editors of THE LANCET.

SIRS,—This action (*vide* THE LANCET, Dec. 7th, 1889, p. 1183) was instituted by the plaintiff against Mr. W. D. Wilkes, senior surgeon to Salisbury Infirmary, for having, some twelve months previously, signed one of the certificates of lunacy by virtue of which plaintiff was placed under treatment in an asylum. Mr. Wilkes applied to a judge at chambers to stay the action, under Section 12 of the Lunacy Law Amendment Act, 1889. The application was successful, but the judge in giving his decision reserved the question of costs, stating that he should give the defendant his costs if the plaintiff appealed. Plaintiff did not appeal, and the result was that defendant, although successful in his application, had to pay costs amounting to a sum not far short of £100. It was thought by Mr. Wilkes' professional friends in this neighbourhood that this was a burden which neither he nor any other medical man similarly placed ought in fairness to be called on to bear single-handed, and an indemnity fund has been started with the object of recouping the amount of his costs. As probably other members of the profession who are not resident in this neighbourhood may wish to assist, we ask you to be so kind as to give this letter a place in your next issue. I am acting as treasurer to the fund, and shall have much pleasure in acknowledging any sums that may be sent to my address. I enclose a list of the whole amount received thus far, which kindly publish with this letter.

I am, Sirs, yours faithfully,
Laverstock House, Salisbury, Feb. 15th, 1890. H. J. MANNING.

Mr. Finch ..	..	..	£10 10 0	Mr. Kingscote	..	..	£1 1 1
Mr. Manning	..	..	1 1 0	Mr. Clifton	..	..	0 10 0
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FELLOWS OF THE EDINBURGH COLLEGE OF SURGEONS IN LONDON.

To the Editors of THE LANCET.

SIRS,—Kindly allow your columns to be the medium of conveying to the Fellows of the Royal College of Surgeons of Edinburgh residing in London (of whom there are about ninety) a suggestion as to the advisability of forming a society of their own in this metropolis. The Fellows of the sister College of Surgeons here have their association; the Brussels medical graduates, the St. Andrews graduates, the Irish medical schools and graduates, and others, have theirs. Why should we not combine also? The doors of some of the largest metropolitan hospitals are closed against us. For instance, the surgeoncy of my nearest hospital—the Great Northern Central in Holloway-road—can only be obtained by a Fellow of the Royal College of Surgeons of England. I shall very willingly do anything and everything in my power to aid the formation of such a society, and hope for an early public expression of opinion from those interested.

I am, Sirs, your obedient servant,
London, Feb. 15th, 1890. A NORTH LONDON FELLOW.

VACCINATION GRANTS.

To the Editors of THE LANCET.

SIRS,—Can any of your readers who may happen to hold the appointment of public vaccinator inform me whether they have received the Government grant for efficient vaccination during the past nine months, or whether, as in my own case, the said grant is still remaining unpaid, although it is very much overdue? I received a communication from the Local Government Board nearly five months since, stating that I have been recommended by the Board's inspector to receive the grant, and that arrangements were being made to pay the same through the County Council, in accordance with Section 24 of the Local Government Act, 1888. The grant in my case is now nearly nine months overdue, and there seems as much likelihood of obtaining it as though the money had never been voted by Parliament for the purpose.

I am, Sirs, your obedient servant,
Feb. 15th, 1890. PUBLIC VACCINATOR.

MULTIPLE BIRTH.

THE *Revista Médica* of Bogota publishes "without comment" an official document, dated Nov. 8th, 1889, emanating from the Prefecture of the Province of Satander, Colombia, stating that a woman belonging to Jambaló, a small town where the people are almost all pure Indians speaking a special dialect, had just given birth to four children in the following manner. On Oct. 26th last she gave birth to a boy, and on the 29th to a girl, both of whom lived sufficiently long to be baptised. On Nov. 4th she gave birth to a boy and a girl. The boy was still-born, and the girl died a few minutes after birth.

M.O.H.—Assuming that our correspondent's district is a provincial one, he should procure the following Acts and books, adding to them from time to time as occasion requires:—The Public Health Act, 1875; the Public Health (Water) Act, 1878; the Rivers Pollution Act, 1876; the Local Government Act, 1888; the Diseases Notification Act, 1889; Shaw's Manual of the Vaccination Law, 5th edition; Knight's Annotated Model Bye-laws; Knight's Manual as to Dairies, Cowsheds, &c.; Knight's Sanitary Regulations as to Bakehouses; The Orders of the Local Government Board as to the duties (*a*) of Medical Officers of Health and (*b*) of Inspectors of Nuisances. As standard reference works we may name Wilson's Handbook of Hygiene (Churchill), Parkes on Hygiene and Public Health (Lewis's Series), and Vital Statistics by Newsholme (Sonnenschein); the annual reports of the Medical Officer of the Local Government Board should also be procured, as containing information on public health questions up to current date.

Mr. John Law.—We cannot insert our correspondent's letter. Our opinion of the contents of the book was given without any prejudice, and in strict accordance with the impressions called up by its perusal.

Freemason.—It is impossible to give to the question an answer which could have any practical value, as so much depends on the characteristics and qualities of the individual.

THE DUTIES RESPECTIVELY OF MEDICAL OFFICERS OF HEALTH AND FACTORY SURGEONS.

To the Editors of THE LANCET.

SIRS,—Perhaps you or some of your readers may be able to enlighten me on the following matter.

A factory surgeon and medical officer of health knows that he has no authority over the sanitary condition of the works by reason of the former office. Is he, or is he not, responsible for the same by virtue of his appointment as medical officer of health? And has he the right to enter, inspect, and report thereon, notwithstanding that the mills are under the supervision of the factory inspector, in which case he has always read the Act to say not? The point having arisen for argument between members of the profession, a reply is awaited in decision. The visiting, inspecting, and reporting referred to are on behalf of the local board, to whom the medical officer of health is responsible, and who act on his advice in monthly and yearly reports.

I am, Sirs, yours obediently,
February, 1890. RUSTIC.

INCOME TAX.

To the Editors of THE LANCET.

SIRS,—My salary as a district medical officer is, with extras, about £52 per annum. I am assessed on my income derived from my practice on £350, and yet, *mirabile dictu*, I am further asked for £1 8*s.* on my parish appointment. I fail to see, having to provide drugs &c., where the profit comes from, as this is a poor neighbourhood, and I have always between twenty and fifty paupers on my list every week. Perhaps some of your correspondents could tell me whether it is customary to pay income tax, separately, on parish appointments, and, if not, what I ought to do to obtain redress.

I am, Sirs, yours obediently,
Feb. 17th, 1890. C. F.

*** Our correspondent might refer with advantage to a letter published in THE LANCET of Dec. 6th, 1884, p. 1030.—ED. L.

Bournemouth.—Much depends on the actual wording of the prohibition. Within ten miles of a certain place means, in an ordinary sense, as the crow flies; but this interpretation may be governed or modified by the context or by surrounding circumstances. Legal advice should be taken.

A CORRECTION.

To the Editors of THE LANCET.

SIRS,—I shall feel obliged if you will kindly insert in your next issue the following correction of an omission occurring in Case 4, line 6, of my article on "The Range of Temperature in Influenza" (page 342 of your last issue). The text should run thus: ".... and this, together with the fact that she had been *nursing her sister-in-law* through her illness, might account for her not feeling quite the thing; anyway, she had appeared quite well up to midday." My intention was to emphasise the fact that in all these cases the commencement of the attack was sudden and well defined; but the omission of the italicised words has rendered the text quite unintelligible.

I am, Sirs, yours faithfully,
Hyde-park-street, W., Feb. 17th, 1890. G. CHARLES WILKIN.

FRENCH FAMILIES.

ACCORDING to the *Lyon Médical* the inquiry made by the Administration in order to carry out the new law giving certain advantages to fathers of more than seven children has shown that in France at present there are 2,000,000 households in which there has been no child; 2,500,000 in which there was one: 2,300,000, two children; 1,500,000, three; about 1,000,000 four; 550,000, five; 330,000, six; and 200,000, seven or more.

Dr. F. L. Benham.—The paper will appear very shortly.

Electric is referred to proceedings of the Medical Council reported in THE LANCET of Nov. 30th, 1889.

DOUBLE DISLOCATION OF THE SHOULDER.

To the Editors of THE LANCET.

SIRS,—As attention has recently been drawn to the rare occurrence of the above-mentioned injury, allow me to say that a case of this kind was reported by me in THE LANCET of July 17th, 1875. The dislocations, which were into the axillæ and easily reduced, had been caused by a fall from some scaffolding. The patient was supposed to have struck the ground with both elbows at the same time.

I am, Sirs, your obedient servant,

D. CHARLES DAVIDSON,

Jan. 30th, 1890. Surg.-Maj. I.M.S.; Acting Civil Surg., Satava.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Howard Murphy, Twickenham; Dr. T. Oliver, Newcastle-on-Tyne; Mr. Henry Lee, London; Mr. Bryant, London; Dr. Herman, London; Mr. Fitzroy Benham, London; Prof. Sonsino, Pisa; Mr. E. Owen; Mr. Christopher Heath, London; Dr. J. F. Payne, London; Dr. Mapother; Mr. John Law, London; Dr. Herschell, London; Mr. Shaw, London; Dr. J. E. Squire, London; Mr. Hadley, London; Mr. McGill, Leeds; Mr. W. K. Dermott, Newry; Mr. A. C. Hartley, Edinburgh; Dr. Lankford, Norfolk, Va.; Dr. A. Hill, Cambridge; Mr. A. Christen, Turin; Mr. L. E. Hill; Mr. Warman, Eastbourne; Messrs. Clarke, Son, and Platt, London; Dr. McClure, Cromer; Messrs. Merryweather and Son, Greenwich; Mr. Greenwood, Clapham; Messrs. Hopkinson and Co., Notts; Mr. Jeaffreson, Newcastle-on-Tyne; Dr. Davies, North Wales; Mr. A. Fournet, London; Mr. Flather, Cambridge; Dr. Carlo Gangitans, Naples; Dr. E. W. Clarke, Chesterfield; Messrs. Wood and Co., New York; Mr. Ellison, London; Messrs. Smith, Elder, and Co., London; Mr. Farbstein, Hull; Mr. Baily, Hanwell; Dr. Beavan Rake, Trinidad; Mr. T. Evans, Sydney; Messrs. Thurbers, Gates, and Co., London; Mr. Swain, Plymouth; Mr. P. Fyfe, Glasgow; Mr. J. Clark, Street; Surgeon-Major D. C. Davidson, Satara; Mr. G. C. Wilkin, London; Dr. F. L. Benham, London; Dr. Parkinson, Sacramento; Dr. McLeod, Calcutta; Mr. W. H. Brown, Maffra, Vic.; Dr. G. Thompson, Stapleton; Dr. T. F. Podley, Rangoon; Messrs. Mertens and Co., London; Surgeon-General Marstan, London; Messrs. Bush and Co., London; Dr. H. Mygind; Mr. Poland, London; Mr. Buxton Browne, London; Mr. J. E. Trevor, Ashburton; Messrs. Wright and Co., Bristol; Dr. Hatton, Church; Mr. A. Duke, Dublin; Messrs. Cox and Co., Brighton; Mr. Manning, Salisbury; Messrs. Mason and Son, London; Mr. Gilruth, Edinburgh; Mr. L. Hill; Messrs. Hertz and Collingwood, London; Dr. Paterson, Cardiff; Messrs. Tong and Sons, Elland; Mr. J. R. Whitley, London; Mr. Harmer, Tunbridge Wells; Dr. J. Holmes, Radcliffe; Mr. Smith, Kilburn; Dr. Ambrogis Bertorell, Milan; Mr. Somerville, London; Messrs. W. H. Smith and Son, Strand; Mr. H. Kimpton; Mr. Fry, Kent; Messrs. Wyleys and Co., Coventry; Dr. F. Trombetta, Massina; Messrs. Orridge and Co., London; Mr. Campbell, London; Mr. Vickers; Messrs. Wickoff and Co., London; Mr. C. Birchall, Liverpool; Mr. Pigott, Cambridge; Dr. Ridge, Enfield; Mr. Ellis, Oswestry; Miss Chreiman, Kensington; Dr. Rogman, Gand; Mr. Marcy, Worcester; Mr. J. B. Browne, London; Mr. Pearce, London; Mr. Jenkins, Salford; Mr. H. K. Lewis, London; Mr. Ker, Worcestershire; Dr. Hyslop, Salop; Mr. C. Percy, Alnwick; Mr. Gurner, London; Dr. Ackland, London; Professor Tyndall, Haslemere; Dr. Kallmeyer, St. Petersburg; Mr. W. H. Kesteven, London; Mr. F. Hewitt, London; Mr. Swinnerton-Dyer, Upham; Medical Student; C. F.; F.R.C.S.; Assistant, Reading; Juvenile Labourer; Undergraduate; Bournemouth; Freemason; A North London Fellow; G. J. P.; Public Vaccinator; Secretary, Western General Dispensary; Electric; One of the Plaintiffs.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Theodore Williams, London; Mrs. Hitch, St. Leonards-on-Sea; Messrs. Smith and Son, Birmingham; Mr. Howard, Hitchin; Messrs. Maythorn and Son, Biggleswade; Dr. Kane, Exmouth; Mr. Cuthbertson, Rhondda Valley; Mr. Tully, Hastings; Miss Laudale, Crieff; Messrs. J. and H. Grace, Bristol; Mr. Cartwright, Leicester; Messrs. Powneeby and Co., London; Dr. Grant, Cornwall; Mr. Askew; Messrs. Blondeau et Cie., London; Dr. Chapman, Winchester; Messrs. Robbins and Co., London; Mr. Philpotts, Oxon.; Mr. Keens, Luton; Mr. Ungent, Cookstown; Mr. Schramm, London; Mr. Sanders, Tamworth; Mr. J. Sergeant, London; Mr. Davidson, Buxton; Mrs. Sanders, Pimlico; Mr. Skeels, Cambs; Mr. Hutchinson, Widnes; Messrs. Masters and Sons, London; Mr. Tyte, Minchinhampton; Mr. Appell, Totland Bay; Mr. Jenkin, Redruth; Dr. Coleman, Dublin; Mr. Diack, Cape Colony; Dr. Adam, Staffs; Mr. Bennett, Burnley; Messrs. Benson and Co., London; Mr. Hensley, Basingstoke; Messrs. Farwig and Co., London; Mr. Ross, Egham; Mr. Davis, London; Messrs. Stent and Son, Guildford; Mr. Miller, Cowbridge; Dr. Cochrane, Wigtonshire; Mr. Adams, London; Mr. Crow, Canterbury; Mr. Blairmore, Harrow; Mr. Coates, Ludgate-hill; Dr. Windle, Halifax; Dr. Taylor, Notts; Mr. Shears, Liverpool; Mr. Tyndall, Haslemere; Mrs. Cooke, Mold; Mr. Wood, London; Dr. Waller, Peterboro'; Mr. Branman, Henley-on-Thames; Mr. Bryden, Shipley; Mr. Quenlan, Lausanne; Mr. Kennedy, Plaistow; Mr. Browne, Manchester; Dr. Chandbury, Telangpail; Dr. Brown, Colchester; Mr. Juler, London; Messrs. Lee and Nightingale, Liverpool; Dr. Johnson, Bucks; Messrs. Maclachlan and Co., Edinburgh; Mr. Heywood, Manchester; Messrs. Keith and Co., Edinburgh; Mr. Laird-Cox, Shropshire; Miss Kitching, Wallingford; Mr. Brice, jun., Exeter; Dr. Herschell, Finsbury; Mr. Dickson, Whitehaven; Mrs. Marriner, Lancaster; Dr. Dickey, Colne; Mr. J. Carter; Mr. Ernst; Mr. Jones, Glamorgan; McClelland, Southport; C. E., Ballybrack; A. B. C., London; Tropics, London; Hamilton Association, London; Massage, London; Imperial Granum Co., New York; St. Bernard's, London; Practice, London; Secretary, Devon and Exeter Hospital; Doctor A., London; G., Birmingham; Lady Superintendent, Manchester; Dispenser, Hanley; Matron, Salisbury General Infirmary; Liq. Carnic Co., Holborn; Garth, London; City Chamberlain, Glasgow; Medicus, co. Durham; M. P., London; Dahl's Agency, London; Beta, London; Sigma, Tamworth; Medicus, New Leeds; Beta, Kensington; T. W. M., Huddersfield; Pepsin, London; Delta, Worcester; Surgeon, London; M., London; F. W., Stamford-hill; A. H. G., Hulme; J. S. W., London; Oceana, London; Alpha, London; Abstainer, Birmingham; Country, London; J. H. B., Bradford; Medicus, Liverpool: Medicus, London; Secretary, St. Mungo's College, Glasgow; A. T. K., London; Kent, London; Zeta, London; Sigma, London; Omega, Hackney; W. G., Bristol; Dante, Rugby.

NEWSPAPERS.—*Sheffield Evening Telegraph, Temperance Record, Leeds Mercury, Le Courrier de la Press (Paris), Nature, Bristol Mercury, Surrey Advertiser, Public Opinion, Nottingham Evening Post, The Rock, Hertfordshire Mercury, Alliance News, Reading Mercury, Manchester Examiner, Christian Globe, Weekly Free Press, Eastern Daily Press, Mining Journal, Manchester Courier, Windsor and Eton Express, City Press, West Middlesex Advertiser, New York Herald (London), Penny Illustrated, Echo (Georgetown), Home News, Gloucestershire Echo, County Gentleman, Kentish Gazette, Daily Graphic, Vegetarian, Lloyd's Weekly, Bakers' Times, Scottish Leader, Midland Evening News, Dundee Advertiser, Birmingham Daily Gazette, Norfolk News, Sunday Times, Kilkenny Journal, Builder, Broad Arrow, Chemist and Druggist, Metropolitan, &c.*, have been received.

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